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The Goulstonian Lectures

ON

SOME DISORDERS OF THE BLOOD AND BLOOD-FORMING ORGANS IN EARLY LIFE.

Delivered before the Royal College of Physicians of London on March 8th, 10th, and 15th, 1904.

BY ROBERT HUTCHISON, M.D. EDIN., F.R.C.P. LOND.,

ASSISTANT PHYSICIAN TO THE LONDON HOSPITAL, ETC.

LECTURE II.[1]

Delivered on March 10th.

ANÆMIAS ASSOCIATED WITH ENLARGEMENT OF THE SPLEEN.

MR PRESIDENT AND GENTLEMEN,—In no section of our knowledge of the blood disorders of early life does greater confusion exist than in regard to that group of anæmias which have as their most striking clinical feature a more or less pronounced enlargement of the spleen and in none are the views of different writers more conflicting. Yet this group includes some of the most striking examples of anæmia met with clinically in childhood, cases, moreover, which are peculiar to this time of life. It is therefore of the first importance that we should try to arrive at some clear ideas as to their nature and relationships. As a preliminary to further study it will be necessary to review briefly the present state of our knowledge as to the functions of the spleen in health.

FUNCTIONS OF THE SPLEEN.

The progress of our knowledge of the diseases of the spleen has long been retarded by the insufficiency of our information as to the rôle which it plays in the physiology of the body. Ever since the time of the Italian anatomists it has been known, indeed, that the spleen is not essential to life. Whatever it does we can get on without it, for its functions seem to be easily capable of being taken up vicariously by other organs. Of these functions that which seems most clearly established is the part which the organ plays as a filter in removing from the blood stream any foreign particles which it may contain. This has been proved experimentally in the case of particulate substances artificially introduced into the blood and almost certainly occurs physiologically in the removal of the débris of red and white cells which have been broken down in the circulation. Enlargement of the spleen in disease may occur as a response to an increased demand for the performance of these scavenger functions and this, no doubt, explains the splenic enlargement met with in acute infective diseases and in malaria. But such enlargement is usually neither great nor persistent and chronic massive enlargement of the spleen in anæmia is certainly not thus to be explained. Like all organs which contain adenoid tissue the spleen can claim to be a seat of formation of lymphocytes. This is a function which is probably of considerable activity in the child in whom the Malpighian bodies are normally both large and numerous. This lymphogenic function, however, is one which the spleen shares with many other organs and notably, in the child at least, with the thymus, and even when the spleen is completely removed no reduction of the number of lymphocytes in the blood occurs. Their number on the contrary is then increased, apparently from an over-compensation for the loss of the spleen by the lymphatic glands. Ehrlich, indeed, goes so far as to say that an increase of the lymphocytes, so long as an affection of the lymph glands can be excluded, should be referred to functional exclusion of the spleen. This is a point of great importance, for, as we shall see, one of the features of many cases of anæmia with splenic enlargement in childhood is just such a lymphocytosis. In addition to lymphocytes some writers have referred to the spleen a share, at least, in the production of the large mononuclear cells, but this cannot be regarded as finally proven.

There is some reason to suppose that during part of intra-uterine life the spleen helps in the formation of red corpuscles, but there is no evidence that this persists as a normal function after birth.[2] On the other hand, Dominici and others believe that, if over-active, the spleen can assume myelogenic functions and give rise both to red cells and to myelocytes. This happens after experimental bleeding and Wolff[3] cites cases in which he has found evidence of the existence of such a function. He is of opinion that the spleen contains "indifferent cells" which can develop along various lines according to the demand of the moment. Normally they produce non-granular white blood corpuscles, but if the function of the marrow is interfered with they can produce both red cells and granular leucocytes. If such an occurrence is indeed possible then it is in the child particularly that one would expect to meet with it, for in early infancy there is reason to believe, as we have already seen, that specialisation of function on the part of the blood-forming organs has not been carried so far as in the adult.

We may now turn to the proper subject matter of this lecture—the anæmias associated with splenic enlargement, and begin by a study of that group of cases which may be classed for convenience as

SPLENIC ANÆMIA OF INFANCY.

Everyone who sees much of disease in children must be quite familiar with the clinical characters of the cases which I propose to group together under this heading. The patient is usually somewhere between six months and two years old. Generally there is some wasting and sometimes this is extreme. The complexion is waxy or sallow, often with a slightly yellow tint resembling that of chlorosis. Rickets is almost invariably present but not usually in an extreme degree. There is a special tendency for the cranial bones to be affected and to show marked bosses in the parietal and frontal regions. The liver is usually somewhat enlarged but not greatly so, and the accessible glands are in many cases readily palpable but never attain any great degree of enlargement. Catarrhal complications such as diarrhœa or bronchitis are often present and death when it occurs is usually due to some intercurrent disease, most commonly broncho-pneumonia. There is no great tendency to hæmorrhage in these cases although epistaxis sometimes occurs. In severe cases a petechial eruption may make its appearance and is usually of ill omen, for few cases which exhibit it recover. Special interest attaches to the relationship of these cases to congenital syphilis and to rickets. Of 42 well-marked cases of which I have notes congenital syphilis was undoubtedly present in six, in 15 it was doubtful, and in 21 (or 50 per cent.) it could be excluded, so far at least as that is ever possible. Rickets was markedly present in 26 and of these 20 exhibited cranial bossing in a greater or less degree. In 13 there was only slight rickets and in three it was entirely absent. The significance of these figures we shall return to later.

Some facts in the family history are of interest. There seems to be a tendency for the disease to occur in more than one member of a family. Twins seem specially liable to suffer. I have seen this four times and the same fact has been pointed out by Fowler and others. In the last lecture, it may be remembered, the tendency for some other forms of anæmia to affect twins was mentioned and possible reasons for it were discussed. I have a general impression, also, although it is difficult to bring it to the test of statistics, that the disease is commoner amongst children of Jewish parentage than others.[4] I certainly have notes of a large number of such cases and the point is of interest as bearing upon the supposed relationship of the disease to congenital syphilis which it will be generally admitted, I think, is rather uncommon amongst the Jews. The existence of tuberculosis in the family is a common fact in the clinical history of these patients but it is difficult to be sure if it is found with a frequency which can be described as greater than that met with in the ordinary run of hospital patients. Certainly the patients themselves do not appear to be more subject to tubercle than other children.

[1] Lecture I. was published in THE LANCET of May 7th, 1904, p. 1253.

[2] See Paton and Goodall, Journal of Physiology, vol. xxix., p. 411 1903.

[3] Zeitschrift für Klinische Medicin, Band xlv., p. 385, 1902.

[4] This has also been pointed out by Clive Riviere.

Blood changes.—The characters of the blood are of special interest (*vide* Table III.). The red corpuscles are always reduced in number but rarely to an extreme degree. From two to three millions per cubic millimetre is the common figure and I have never seen a case in which they fell below one million. Fowler records a case in which they were normal in number, but I have never met with such myself. The hæmoglobin is always reduced but not necessarily in proportion to the reduction of red cells, and bearing in mind the low ratio of hæmoglobin which is normal to infancy the percentage may be only slightly reduced. As in all severe anæmias in childhood the red corpuscles are apt to vary a good deal in size, large forms being often met with. More or less of poikilocytosis is usually present, but it is seldom of extreme degree.

Much importance has been attached to the presence of nucleated corpuscles in the blood in this disease. They are certainly usually present but it must be remembered that, as already pointed out, nucleated cells are apt to appear in all severe cases of anæmia in young children and I am not sure that they form a more striking feature in the blood of this disease than in grave secondary anæmias. The majority of them are normoblasts, the nuclei of which often exhibit signs of division, but megaloblasts are also met with. Fowler found them in 13 out of 20 cases and they certainly do not have the same grave significance as attaches to their presence in the blood of the adult. It is difficult to know indeed what importance can be attached to the occurrence of nucleated red corpuscles in the anæmias of childhood. In the cases under consideration at all events they exhibit no constant relation either to the total number of red cells or to the degree of leucocytosis. A reference to the table will show that nucleated red cells may be abundant even although the red corpuscles themselves are not greatly reduced, and a high degree of leucocytosis is not necessarily accompanied by the presence of a high proportion of normoblasts. A leucocytosis is usually present in these cases but not invariably. A reference to the table will show that in a considerable number of cases the total number of white cells is actually reduced. An increase, however, is commoner, but the tendency is to over-estimate it, forgetting that between the ages of one year and 18 months, at which the majority of these cases is met with, the number of leucocytes is normally from 12,000 to 14,000 per cubic millimetre. In order to avoid confusion on this point I have calculated the absolute numbers of granular and non-granular cells per cubic millimetre in each case (see table). It will be observed that in a few cases an absolute increase in the granular cells occurs. In some instances this is undoubtedly due to an ordinary leucocytosis called out by the existence of complications, such as broncho-pneumonia, but in others no such cause could be discovered. More usually the increase is chiefly to be ascribed to an augmented number of non-granular cells in the blood. One can see in this an exaggeration of the normal characters of the blood of infancy and another illustration of the tendency for the adenoid tissue to be affected specially at this time of life. The increase in the non-granular cells tends particularly to affect the larger lymphocytes and the large mononuclears, but every intermediate grade between these and the ordinary small lymphocyte is met with, so that exact differential counting becomes difficult. There is, in fact, a marked polymorphism in the leucocytosis in these cases just as there is in cases of myelogenous leukæmia. Myelocytes are usually present, perhaps in all if carefully looked for. The highest proportion I have seen has been 13·8 per cent. (Case 18); usually they number 2 per cent. They are often small in size and exhibit but sparse granulation. The eosinophiles never appear to be affected but in a few cases I have found mast cells markedly increased. The bearing of the blood changes on theories as to the nature of the disease will be discussed later; meantime it may be pointed out that clinically they are chiefly of importance from the point of view of prognosis. In this respect they afford more trustworthy criteria than any other feature of the disease. The degree of splenic enlargement, for instance, appears to be of little import; on the other hand, the lower the number of red cells and the higher the number of white cells the more severe must the condition be regarded. Further, the more polymorphic the blood—that is to say, the greater the number of large lymphocytes and myelocytes present—the worse is the outlook.

PATHOLOGY.

In proportion to the amount of clinical interest which cases of this group have excited but little attention has been paid to their morbid anatomy and pathology and the descriptions of those who have written upon the subject are mainly confined to the changes met with in the spleen. So long ago as 1886 Stilling[5] described changes in the spleen of rickety children with anæmia, changes which, he said, he had never found in the spleen of an adult. The centres of the Malpighian bodies in these cases showed the presence of areas of epithelial cells of varying size, with protoplasm for the most part homogeneous but containing a few granulations at the periphery and sometimes fat droplets or pigment grains. These cells stained badly and presented a large round or oval nucleus. The mass of lymphocytes surrounding these cells was often so broad as to suggest to this observer an over-activity of the follicle. Sometimes the follicles were very small and not visible at all to the low power but on more careful examination were found to be represented only by small masses of the above cells which had undergone degeneration and vacuolation, the whole appearance giving the impression of a degenerative process. In true cases the follicles are often sharply marked off from the spleen pulp by many concentric layers of densely packed spindle-shaped cells, which form a sort of capsule for the degenerated Malpighian body. Stilling thinks that those appearances indicate an attempt on the part of the spleen to form new cells but that the regenerative elements have undergone degeneration before perhaps they have had time to divide.

Luzet[6] gives a fairly detailed description of the morbid anatomy in one case. He notes in the spleen the existence of perisplenitis but the absence of any increase in thickness of the trabeculæ. The Malpighian bodies were absent but he gives no detailed description of any change in them. He attaches much importance to the absence in the pulp of the large multinuclear cells which he believes to be normally the originators of red corpuscles and concludes from this that the spleen in spite of its size is not taking any active share in the regeneration of the blood. He lays great stress upon the appearance of the liver in his case which presented the fœtal characteristics of indistinct lobulation and showed numerous nucleated red corpuscles between the columns of hepatic cells. Here and there large cells were to be found with nuclei which were often spindle-shaped, exhibited signs of segmentation, and possessed granular protoplasm. These cells he regards as hæmopoietic in nature and on the strength of their presence he considers the essential visceral change in the disease as a resumption of blood-forming functions on the part of the liver. He found the marrow of the femur to be red and rather diffluent. It did not appear to him that the multiplication of red cells in it was very active. Fat was only present in the marrow of the medullary cavity. Mya and Trambusti in a paper published in 1892[7] refer to the changes found by Cardarelli and Fedé[8] and describe the morbid anatomy of two cases of their own. They regard the changes in the spleen as resembling those described by Banti in splenic anæmia—viz., chronic splenitis with hypertrophy of the usual connective tissue of the pulp, much of which had undergone hyaline degeneration. The pulp contained numerous normoblasts with nuclei undergoing mitosis. The Malpighian bodies were atrophic and some of them were converted into mere fibrous knots. The liver in these cases was fatty and they describe the presence in the liver capillaries of multinucleated cells such as those to which Luzet attaches so much importance. They found a great formation of new capillaries in the lymph glands. Fedé,[9] in the joint paper which he wrote with Somma, in dealing with the pathology of the disease stated that the glands were normal or slightly enlarged, that the liver was often enlarged from congestion and that there were slight increase of connective tissue and cloudy swelling; fatty degeneration and atrophy of the liver cells might be present in some cases. The spleen, he said, was very large firm, and dark red on section, its connective tissue was increased, the pulp was rich in lymphatic cells, and the follicles were hyperplastic. Glockner[10] in 1898 described the microscopical characters of the spleen in four well-marked cases of the splenic anæmia of childhood. He summarises his observations thus. There is a varying degree of thickening of the capsule and also

[5] Virchow's Archiv, Band ciii.
[6] Etude sur les Anémies de la Première Enfance, Paris, 1891.
[7] Lo Sperimentale, vol. xlvi., p. 359.
[8] Atti del Primo Congresso Pediatrico Italiano, Napoli, 1891.
[9] Quoted by Wentworth, Boston Medical and Surgical Journal, No. 17, 1900.
[10] Reference in Schmidt's Jahrbuch, Band cclv., 1897, p. 187.

of the septa. There is also a general thickening of the reticular framework, forming a network of enlarged and coarse fibres with definite meshes. Where this process is most advanced the fibres fuse together into more or less homogeneous bundles. There is marked thickening of the adventitia of the smaller arteries in every case and a general anæmia of the whole organ is also striking. The Malpighian bodies, apart from thickening of their reticulum, show no marked changes and are well defined. The specific elements of the pulp also exhibit in only a few places any real hyperplasia, much more generally some degree of atrophy. Only two elements are evidently overgrown—the epithelioid cells of the pulp and, to a less extent, the endothelia of the vessels. The former are probably derived from the fixed cells of the connective tissue and as they increase so does the pulp atrophy.

Fowler[11] reports upon three cases but remarks that the results do not throw much light on the nature of the disease. In one of them the spleen was markedly congested but the Malpighian bodies were distinct and there was a considerable excess of eosinophile cells in the pulp sinuses. In a second case the spleen was anæmic, the Malpighian bodies were distinct, and there was an even more marked eosinophilia. In the third case the pulp was much hypertrophied and the Malpighian bodies were correspondingly obscured, the condition indeed being not unlike that met with in myelæmia. In this case there was no eosinophilia. In none of the three cases could he find in the liver the hæmopoietic cells to which Luzet attaches so much importance. The bone marrow was satisfactorily examined in one case only and appeared to be normal. Hunt[12] describes two cases of "splenic anæmia with internal hæmorrhages in infants." In both the spleen was dense, the Malpighian bodies were replaced by fibrous tissue, and the fibrous tissue of the pulp was increased, but not so much as the trabeculæ. The enlarged spleen of mere rickets exhibits, he thinks, more change in the trabeculæ and less in the pulp than in these cases, whilst the Malpighian bodies are normal or even exaggerated. Ewing[13] in a case of so-called von Jaksch's anæmia in a child 20 months old found the pulp cells of the spleen overgrown and the follicles much reduced in size and number. Throughout the pulp were numerous collections of small cells with compact or mitotic nuclei. Many of these were normoblasts. There was commencing increase of connective tissue and many of the sinuses were obliterated. The liver showed many small intracapillary foci of cells, many of them undergoing mitosis of which the majority were normoblasts, but others were much larger and granular. Occasionally they were fused together into a mass resembling the multinucleated masses of Luzet. The marrow contained no fat; all its cellular constituents were in a state of hyperplasia. Nucleated red cells were very numerous but eosinophiles were not increased.

I have made careful examinations of the organs in five cases of this disease (Cases 1, 16, 17, and 21 in Table III and in one unrecorded case). The histological changes were neither constant nor identical in all of them. In three of them the spleen showed a diffuse overgrowth of the supporting reticulum of the pulp which tended to encroach upon the Malpighian bodies from their periphery so that the outlines of these were lost and in one case at least (Case 16) they were converted into mere knots of fibrous tissue. The overgrowth of the pulp stroma in each of these cases was accompanied by thickening of the capsule and trabeculæ of the organ which sometimes reached a high degree. In two of the cases, on the other hand (Cases 17 and 21), the Malpighian bodies were large and well defined and there was no overgrowth of the pulp stroma. The pulp spaces were often much congested, but in none of my cases could I find any satisfactory evidence of the resumption of blood-forming functions by the spleen nor was there any excess of eosinophile cells present nor any marked overgrowth of the endothelium lining the pulp spaces or venous sinuses.

The marrow was examined both by films and sections in three cases (Cases 16, 17, and 21 in Table III.). In every case it was abundant and fleshy and showed evidences of great cellular activity. Neutrophile and eosinophile myelocytes were present in large numbers as well as "lymphocytic" marrow cells but it was difficult to be sure whether these were more numerous than in normal marrow from a child of the same age. There was abundant evidence of active red cell formation in all cases but few megaloblasts were observed. The liver was examined in four cases. In two of these it was practically normal. In the others it showed merely fatty degeneration, but in one of an extreme degree. I could find no evidence of the presence of Luzet's hæmopoietic cells. In none was there any decided increase of the interlobular connective tissue. The lymphatic glands were examined in three cases. In two of these no change could be discovered. In one (No. 16) the capsule was much thickened and there was a great overgrowth of the supporting tissue of the reticulum at the expense of the gland parenchyma so that the whole section was solid and fibrous-looking. The change was not like that observed in Hodgkin's disease, there being more fibrous tissue formation and less overgrowth of the endothelial cells of the lymph sinuses. It resembled much more the alterations already described as occurring in the spleen pulp in some of these cases.

Speaking generally, the chief change in the spleen in these cases may be spoken of as a chronic splenitis affecting chiefly the pulp but sometimes invading the Malpighian bodies. There would seem to be no definite relation between the extent of the spleen changes and the degree of anæmia but the change seems to have gone on to the greatest degree of fibrosis in the cases of longest standing. The fatty degeneration of the liver is comparable to that which one finds in all advanced anæmias whilst the condition of the marrow is probably merely compensatory. In the one case in which glandular changes were found the condition seemed to be a chronic adenitis comparable to the chronic splenitis already described.

Before proceeding to discuss the relation of the pathological changes to the clinical symptoms in this disease it may be well to indicate briefly the views as to its nature which have been put forward by those who have written on the subject. Gretsel[14] writing so long ago as 1866 was the first to apply the term "splenic anæmia" to cases of this group. He used the term for convenience and without any theory as to their pathology but simply in order to bring the disease into line with leukæmia splenica and lymphatica as these terms were then used. Italian writers early directed their attention to cases of anæmia associated with enlargement of the spleen in infancy. Somma[15] in 1884 described a series of cases and applied to them the term "anæmia splenica infantile." He was followed by Di Lorenzo[16] who first introduced the term "infective" (infettiva) in connexion with these cases, a term which was subsequently adopted by Somma and by Fedé, Cardarelli, and some other Italian writers who have described cases of this group. Most of these writers regarded the disease as due to bacterial infection and describe different forms of micro-organisms found in the spleen which they believed to be the specific cause. Meanwhile von Jaksch[17] described cases of anæmia with splenic enlargement in children which he thought were characterised by reduction of red cells and hæmoglobin, high and persistent leucocytosis, enlargement of the spleen and sometimes of the lymphatic glands and to a less degree of the liver. To these cases he applied the term "anæmia pseudo-leukæmica infantum." Von Jaksch's account, probably because it was published in German and at a time when diseases of the blood were beginning to be studied more accurately than ever before, attracted considerable attention and most subsequent writers have followed his terminology. To later communications it would be unnecessary and tedious to make any special reference as they add but little to our clinical knowledge of the disease, and the pathological facts which they contain have already been described, but an excellent summary of them will be found in a series of exhaustive papers by Wentworth in vol. cxlv. of the *Boston Medical and Surgical Journal*. It is to be regretted on every ground that the term "pseudo-leukæmia" was ever applied to these cases by von Jaksch as it has been the means of introducing great confusion into the descriptions of the disease. For almost everyone who has devoted special attention to the subject must agree with the conclusion of Wentworth a conclusion which has also been arrived at by the majority of recent writers, that the "anæmia splenica infettiva dei bambini" of the Italian writers and the "anæmia infantum pseudo-leukæmia" of von Jaksch are

[11] Brit. Med. Jour., Sept. 6th, 1902.

[12] Transactions of the Pathological Society of London, vol. l., p. 209, 1899.

[13] Clinical Pathology of the Blood, p. 237.

[14] Berliner Klinische Wochenschrift, No. 20, 1866.

[15] Archivio di Patologia Infantile, 1884, vol. ii., p. 21.

[16] Archivio Italiano di Pediatrica, vol. viii., p. 175, 1890.

[17] Wiener Klinische Wochenschrift, 1888, and Prager Medicinisch Wochenschrift, 1890.

TABLE III.—CASES OF SPLENIC ANÆMIA OF INFANCY.*

No.	Sex and age.	General clinical characters.	Rickets.	Congenital syphilis.	Spleen.	Glands.	Red corpuscles.	Hæmoglobin per cent.	Total white cells per cubic millimetre.	Absolute number of mononuclears per cubic millimetre.	Absolute number of polynuclears per cubic millimetre.	Differential count (percentages). Polynuclears.	Large mononuclears and transitionals.	Lymphocytes.	Eosinophiles.	Myelocytes.	Result.
1	F., 24 months.	Ill for a few weeks; marked pallor; hæmic murmurs.	Very slight.	(?)	To umbilicus.	Slightly +	1,800,000. Many microcytes and oval forms. No nucleated red cells.	16	1,800	885 (−5715)	937 (−4275)	49·3	7·6	41·6	1·5	—	Died from noma ten months after first coming under observation.
2	M., 12 months.	A twin; always delicate; chlorotic complexion; hæmic murmurs.	Marked head bosses.	−	" "	Definitely +	3,200,000. Unequal in size; some poikilocytosis, a few nucleated.	25	10,920	7469 (−651)	3276 (−2324)	30	68·4		1·5	Very few.	Death from broncho-pneumonia.
3	M., 11 months.	Ailing since bronchitis seven months before; wasted, pale.	Marked.	−	Two fingers' breadth below the umbilicus.	(?)	2,324,000	30	16,000	5280 (−2840)	8960 (+3360)	56	3	30	—	3	Improving when lost sight of.
4	F., 18 months.	Ill since measles three months before; pale but not yellow; hæmic murmurs.	Bossed head.	+	To umbilicus.	−	3,820,000. Some poikilocytosis, a few normoblasts.	32	20,000	14,500 (+7900)	5180 (normal)	25·9	74·3		—	—	Died. No post-mortem examination.
5	F., 13 months.	Very pale; wasted.	+ Head bossed.	(?)	Four fingers' breadth below the costal margin.	Slightly +	2,805,000	33	24,000	10,272 (+2152)	13,800 (+8200)	57·5	10·6	32·2	0·5	6·1	Died from bronchitis three weeks after admission.
6	M., 27 months.	Always delicate; no definite illness; olive complexion.	Moderate.	−	" "	(?)	3,580,000. A few nucleated red cells.	—	15,000	4050 (−1950)	8400 (+3240)	54	11	16	4	5	(?)
7	M., 17 months.	Never well since birth; repeated hæmorrhages; very pale; some purpuric spots.	+	−	Into pelvis.	Very slightly +	3,312,000	28	36,000	20,520 (+13,920)	13,824 (+8664)	38·4	8·6	48·4	0·1	3·5	Improving when lost sight of.
8	F., 9 months.	Wasting and anæmic, one month; following two attacks of diarrhœa and vomiting.	+ Head bossed	−	To umbilicus.	−	1,040,000	—	34,000	21,080 (+12,960)	12,240 (+6640)	36	4	58	2	(?)	Improving.
9	M., 32 months.	An eight months child; never strong; extreme waxy pallor; hæmic murmurs.	Slight; no bossing.	+	Easily palpable.	−	1,600,000	—	14,000	10,024 (+54·4)	3570 (−16·0)	25·5	10·38	61·3	2·7	—	(?)
10	M., 12 months.	Pale and wasting for four months; complexion pale but not yellow; hæmic murmurs.	Marked; slight bossing.	−	Half-way to the umbilicus.	−	3,193,000. Not much poikilocytosis; numerous nucleated forms, many of them megaloblasts.	—	35,000	11,900 (+3780)	22,050 (+16,450)	63	14	20·3	0·6	0·6	Died.
11	M.,	Ailing since birth; pale;	Slight; no bossing.	(?)	One finger's breadth below	Slightly +	3,700,000	—	18,500	12,210 (+4000)	4625 (−1000)	25	8	66	—	(?)	Died six months later.

11	M., 9 months.	Ailing since birth; pale; badly nourished; general purpuric rash.	Slight; no bossing.	(?)	One finger's breadth below the umbilicus.	Slightly +	3,700,000	—	18,500	12,210 (+4000)	4625 (−1000)	25	8	66	—	(?)	Died six months later.
12	M., 35 months.	Ill off and on since severe diarrhœa six months ago; fairly nourished; earthy complexion; hæmic murmurs.	None; no bosses.	Probable.	Two fingers' breadth below the costal margin.	—	3,000,000	—	25,000	12,500 (+6000)	10,150 (+5000)	40·6	6	49·4	4	—	Improving when lost sight of.
13	M., 18 months.	Ailing six months; yellowish complexion; well nourished.	+ Moderate bossing.	—	One finger's breadth below the umbilicus.	Slightly +	2,760,000. No nucleated red cells.	—	9,000	2970 (−3600)	5940 (slightly +)	66	33		1	—	Recovered.
14	F., 12 months.	Ill two months; sallow complexion; hæmic murmurs.	Slight; very slight bossing.	—	,,	Slightly +	2,750,000	—	52 000	31,720 (+25,120)	14,860 (+9400)	28	7	54	—	7‡	Died.
15	M., 18 months.	Ailing since three months old; prolonged digestive disturbance; pale but not sallow; poorly nourished; slight hæmic murmurs.	Moderate.	—	Half-way to the umbilicus.	—	3,085,000. One normoblast to every 100 white cells.	—	4,000	1560 (−5000)	2408 (−2700)	60·2	7	32	0 8	—	(?) Recovered.
16	M., 36 months.	Ill for three months; pale but not chlorotic; fairly nourished; liver enlarged and firm; some ascites.	Slight.	(?)	Very greatly enlarged.	—	2,000,000. Some poikilocytosis; a few normoblasts.	40	120,000	96,160 (+88,560)	11,400 (+6240)	9·5	79·3		6	4 2	(?)
17	M., 10 months	Wasting since six months old; long-standing constipation.	Slight.	(?)	One finger's breadth below the umbilicus.	Palpable in the neck.	3,835,000. Marked poikilocytosis; 14 normoblasts to 100 white cells, many showing mitosis.	23	15,000	10,500 (+2380)	3780 (−1820)	25·2	18 8	51·2	1 6	3·2	Died from whooping-cough.
18	F., 24 months.	Ill for six months; chlorotic complexion; liver slightly enlarged.	Distinct.	+	—	Slightly enlarged all over.	4,072 000. Moderate poikilocytosis; normoblasts numerous.	32	52,000	31,200 (+24,600)	11,960 (+6800)	23·3	41 2§	18 7	2 8	13·8	Died.
19	M., 11 months	A twin; pale since birth; bottle-fed; has had frequent diarrhœa.	Distinct; slight bossing.	—	Four fingers' breadth below the ribs.	Slightly enlarged in the neck.	1,940 000. Marked poikilocytosis and many normoblasts.	34	16,100	8320 (normal)	7280 (+1680)	45 5	52		2 0	0 5	(?)
20	M., 11 months.	Co-twin of the above; same history and symptoms.	,,	—	Three fingers' breadth below the ribs.	,,	3,260,000. Poikilocytosis and many normoblasts.	36	18,700	11,220 (+3100)	7106 (+1506)	38	60		—	2	(?)
21	M., 12 months	A seven months child; pale since birth; bottle-fed; suffers from head-nodding.	Slight.	+	Four fingers' breadth below the ribs.	—	1,765,000. Poikilocytosis well marked; two normoblasts to 100 white cells.	26	4 500	2430 (−5693)	1975 (−2665)	43	54		3	—	Died.
22	M., 13 months.	A seven months child; yellowish complexion; general œdema.	Slight; head bossed.	Probable.	Enormously enlarged.	(?)	2,585,000. Considerable variation in size; some poikilocytosis; 13 per cent. of normoblasts, many showing mitosis.	23	9,350	5002 (−3118)	3459 (−2141)	37	12·5	41	—	9 5	(?)

* Since this table was constructed a very similar one has been published by Dr J. H. Drysdale and Dr. Hugh Thursfield in a paper read before the Royal Medical and Chirurgical Society on Feb. 9th, 1904. As both tables are based largely on the records of the Hospital for Sick Children, Great Ormond-street, many of the cases included in them are identical. † The figures within brackets indicate the absolute excess or deficit of each kind of cell per cubic millimetre, calculated on the basis of the normal numbers at different ages, as described in the first lecture. ‡ A considerable number with basophile granulation. § Most of these were large round cells with diffusely staining nucleus and protoplasm, the latter often with fine basophile granulation, some with mixed granulation.

really different ways of describing the same condition. Von Jaksch, in fact, appears to have based his original description simply on a rather severe example of the disease already described by Italian authors. There is thus no real reason for writing as some do of von Jaksch's anæmia as if it were a special morbid entity and the term "splenic anæmia of infancy" is much less objectionable on all grounds than "pseudo-leukæmia infantum" and it is for that reason that I have made use of it in the present description of the disease.

NATURE OF THE DISEASE.

Granted, then, that there exists a clinical group of cases presenting the characters I have narrated and which may be conveniently described under the term "splenic anæmia of infancy," we have next to answer the question: Do such cases constitute a definite morbid entity as clearly marked off from other forms of anæmia as, let us say, myelogenous leukæmia? On the reply to be given to this question different writers hold very different views but they may be divided for purposes of discussion into four groups: 1. Those who hold with Wentworth, Fischl, Morse, and others that the splenic anæmia of infancy is not a definite disease but merely a secondary anæmia which owes its peculiar characteristics to the fact of its occurrence in the early years of life. 2. Those who regard it as merely an aleukæmic stage of a true leukæmia. This view has been specially advocated by Luzet and Troje. 3. Those who consider it to stand half-way between leukæmia and pernicious anæmia, a cross, as it were, between these diseases and partaking of the characteristics of both. This is apparently the opinion of Rotch and Ladd, Engel, and Ewing. 4. Those who consider that the disease is one *sui generis*, which is the position taken up by Alt and Weiss in Germany and by Fowler, Melland, and Drysdale and Thursfield amongst English writers. These different positions must now be briefly discussed.

1. Those who regard the disease as a mere secondary anæmia in which the enlarged spleen is, so to speak, merely an accident, base their position on the absence of any apparent connexion between the blood changes and the splenic hypertrophy. Cases with identical lesions in the spleen—namely, chronic hyperplasia—show varying degrees of anæmia. At times, they say, there are marked changes in the blood and at others the changes are very slight and the degree of leucocytosis shows similar variability. These differences cannot be explained by the duration of the condition in many cases and all that one is justified in saying is that in some of the secondary anæmias of infancy there is a chronic hyperplasia of the spleen and in others not. It may be admitted that many of these statements have much force. There is no definite relationship between the degree of splenic enlargement and the character of the blood in these cases, for the spleen may be very large with slight anæmia or the anæmia may be profound and the splenic hyperplasia by no means excessive. This is by no means so certainly the case as regards the leucocytosis however. I think we can say that there is at least a general ratio between the extent to which the spleen is enlarged and the increase in number of the leucocytes and that these usually vary together. It is the polymorphism of the leucocytosis, however, in these cases which is their most important feature and which distinguishes them, I believe, from the secondary anæmias, just as the polymorphism of the white cells in leukæmia distinguishes that disease from a severe leucocytosis. Even in severe secondary anæmias such as we studied in the last lecture such polymorphism does not occur. Great stress has been laid by the advocates of the view that the splenic anæmia of infancy is merely a secondary anæmia on the association between cases so described with rickets and congenital syphilis. That rickets is a very constant concomitant of these cases may be freely admitted, for all clinical statistics go to prove it. On the other hand, it is equally certain that in a few cases rickets has been absent (Case 12 of Table III.). Nor is there any definite relationship between the severity of the rickets and the degree of splenic enlargement or of blood change. Some of the severest cases show but slight evidence of rickets, whilst severe rickets is often enough accompanied by no appreciable degree of anæmia. Rickets therefore cannot *per se* produce the phenomena characteristic of splenic anæmia and it seems more reasonable to suppose that when the two coexist they are both the result of some common but as yet unknown cause which operates at one time chiefly in the direction of producing anæmia and at others exerts its effects chiefly upon the blood-forming organs.

The evidence in favour of a causal connexion between congenital syphilis and splenic anæmia is even less convincing. The statistics of my own cases showed that the former disease could be excluded in one half the number of the latter and other observers have arrived at very similar results. That congenital syphilis is capable of producing severe secondary anæmia we have already seen and that it can also give rise to splenic enlargement there can be no question, but the latter when due to the syphilitic cachexia is rarely great in degree and is characterised by its occurrence within the first six months of life (Carpenter), a time at which splenic anæmia does not occur. That congenital syphilis, like any other debilitating condition, may predispose a child to become the subject of splenic anæmia one can well imagine, but that there is any more direct relation between them cannot be admitted.

2. The view that the disease under consideration is merely an aleukæmic stage of a true leukæmia—a stage at which the hypertrophy of the spleen is still able to keep in check the excess of white cells produced by the marrow—has been advocated by Troje[18] but has little to commend it. That such aleukæmic stages do sometimes occur in the course of true leukæmias many recorded cases attest, but no one has ever described a case of splenic anæmia in a child which passed later into a genuine leukæmia. Further, it is to be remembered that, as we shall see later, true leukæmia, at least in the myelogenous form, is excessively rare in early childhood, whilst anæmia associated with enlargement of the spleen is by no means uncommon. That being so it is in the last degree improbable that the one is merely a stage of the other. Add to this that the appearances found after death in the two conditions are by no means similar and the proof seems complete that there can be no identity between them. That some of the severest forms of splenic anæmia in infancy do nevertheless suggest, as far at least as their blood picture is concerned, a mild leukæmia cannot be denied, but the appearance is much more that of a mixed myelogenous and lymphatic leukæmia than a pure form of either disease. To this point I shall return, however, when I come to speak of leukæmia in childhood.

3. The view that the so-called splenic anæmia of infancy stands intermediate between pernicious anæmia and leukæmia has not been put forward by its authors with any great degree of clearness. It is difficult especially to ascertain whether they mean to imply by it that these two diseases are actually to be supposed to be coexisting or whether it is merely that the blood picture suggests a mixture of anæmia of these two types. That a casual inspection of a typical blood film from a severe case of splenic anæmia might at first suggest a combination of pernicious anæmia and leukæmia may be admitted but the red cells in this disease are rarely reduced in number to the degree characteristic of pernicious anæmia, and from the mere presence of numerous normoblasts or even megaloblasts in infancy our study of the secondary anæmias showed us that no conclusions can safely be drawn, whilst the supposed resemblance to leukæmia has already been dealt with. Further, the post-mortem appearances are not those of pernicious anæmia. The presence of iron in the liver which is so characteristic of the latter disease is not found in splenic anæmia and to the mere presence of red marrow in the shafts of the long bones no importance can be attached, for, as we have seen, it is a normal occurrence during the earlier years of life, whilst the microscopical characters of the marrow do not at all correspond with those found in true pernicious anæmia. This view may also be dismissed as in no wise helping to elucidate the nature of the disease.

4. We come finally to the only remaining theory—viz., that splenic anæmia of infancy is a definite morbid entity—a disease *sui generis*. The grounds upon which the holders of this view base their opinion have already been considered incidentally when I dealt with the presumption that the disease is merely a peculiar form of secondary anæmia and consist, it will be remembered, in the peculiar type of blood change and, in particular, on the polymorphous character of the leucocytosis. It must be admitted, however, that there is more reason to class these cases by themselves clinically than pathologically, for the splenic anæmia of infancy has no pathological anatomy peculiar to itself. The histological changes in the spleen, though perhaps greater in degree, are still only the same in kind as are met with in many other cachectic conditions, notably in rickets and in congenital syphilis. The changes in the enlarged

[18] Berliner Klinische Wochenschrift, No. 12, 1892.

spleen in rickets have been specially studied by Sasuschin [19] in 11 cases. To the naked eye he found that the spleen was firm, its capsule rather thickened, the surface pale, and the Malpighian bodies fewer than normal. The microscope showed a fibrous hyperplasia of the supporting tissue and trabeculæ and thickening of the walls of the arteries. The Malpighian bodies were diminished in size and showed an excess of fibrous tissue at their periphery. Towards their centres groups of endothelial cells, often undergoing degenerative changes, could be made out. The endothelial lining of the blood-vessels was often swollen. He regards the change as one of chronic inflammation which interferes with the function of the spleen as a blood former. It will be noted that these changes are practically identical with those found in the large spleen of splenic anæmia of infancy. In the spleen of congenital syphilis I have found very similar changes, many of the Malpighian bodies being fibrous and the whole supporting tissue of the pulp increased in amount.

Nor are the changes in other organs any more characteristic. The presence of hæmopoietic cells in the liver which Luzet regarded as pathognomonic of the disease has not been confirmed by other observers and the changes found in the marrow are not sufficiently striking to justify one in regarding them as distinctive. None the less I side with those who would place these cases for clinical purposes in a category by themselves, for diseases cannot be classified entirely on their pathological anatomy, else would chlorosis cease to occupy a chapter by itself in our text-books. That it is difficult to draw any hard-and-fast line between these cases and those of secondary anæmia I admit, for at the lower end of the scale the milder cases merge with those of slight anæmia—usually of a more or less chlorotic type—sometimes met with in pure rickets.[20] At the upper end of the scale we find severe cases which stand, as far as their blood picture is concerned, very close to myelogenous leukæmia though never, I believe, really merging into that disease. It is to these severe cases that the descriptions of the so-called von Jaksch's anæmia specially apply but that they can be sharply distinguished from the milder forms cannot be admitted, for, as the table of cases shows, every intermediate degree of severity is met with. It appears to me that it is better to employ the term "splenic anæmia of infancy" to cover all the cases of every degree of severity rather than to use the description "pseudo-leukæmia infantum" introduced by von Jaksch. For the term "pseudo-leukæmia" is one open to objection on many grounds and has I venture to think been the means of introducing great and regrettable confusion into the whole subject. As to the real causal factor in the disease we are still completely in the dark and I confess I am unable to throw any light on the point. Although enlargement of the spleen seems usually, as a clinical fact, to precede the anæmia, it can hardly be regarded as the cause of the latter, for there is no definite ratio, as we have seen, between the size of the spleen and the degree of blood change and in cases which recover the anæmia may pass off long before the spleen has regained its normal size. It would be difficult to understand in any case, as Wentworth has remarked, how a mere fibrous hyperplasia of the spleen could produce by any means an increased destruction of the blood. I am aware that in the so-called splenic anæmia of adults excision of the enlarged organ has often been followed by cure of the disease, but these two disorders, as we shall see immediately, are really entirely distinct and what holds good of one does not necessarily apply to the other. In splenic anæmia of infancy at all events the crucial experiment of operative removal of the spleen is scarcely admissible, for the disease is not one which is inevitably progressive but, on the contrary, is often spontaneously recovered from. On all grounds it seems much more likely that the enlarged spleen and the anæmia are both the result of one common cause, some specific cachexia, possibly toxic in nature. Such a toxin might affect the spleen in the same way as the syphilitic poison does and at the same time induce an increased destruction of red cells or cause an interference with their formation. It has been suggested by Clive Riviere [21] that such a specific toxin as has been postulated may be of gastro intestinal origin and produced by an abnormal growth of micro organisms, the consequence of gastro intestinal catarrh and injudicious feeding. This ingenious hypothesis, however, can hardly be true of all cases, for in a considerable number, at least, one fails to find any history of diarrhœa, whilst, on the other hand, gastro-intestinal catarrh is of such frequent occurrence in infancy that one must always be very chary of assigning to it a definite share in the production of any given disease. It should be mentioned, however, that a similar theory has been advanced by Rolleston and others to explain the production of the enlarged spleen of adult splenic anæmia and Hamilton has suggested that the supposed toxin in such cases may owe its origin to an abnormal intestinal flora.[22]

The leucocytosis in this disease may be the consequence of an interference with the function of the spleen, an expression of its physiological incapacity, and an indication of the vicarious performance of its function by adenoid tissue elsewhere, just as happens after experimental removal of the organ. Adenoid tissue elsewhere, acting, so to speak, in a hurry, might easily turn out cells of an immature type such as we have seen to be commonly the case in this disease. It is probable that the changes in the marrow are also of the nature of a compensatory hypertrophy, for if the differentiation of function of the adenoid tissue and marrow is less complete in early life than in the adult it may perhaps be the case that the undifferentiated cells of the marrow in this disease develop into non-granular instead of into granular leucocytes. That the osseous changes in rickets have over-production of marrow as a secondary result is very likely, for we have already seen how closely bone development and marrow formation are related. The head bosses in particular which are so constant a feature in splenic anæmia involve a considerable increase in thickness and extent of the blood-forming tissue and may really be as much a hypertrophy of marrow as a bone change.

Relation of the Splenic Anæmia of Infancy to the So-called Splenic Anæmia of Adults.

I have recommended the use of the term splenic anæmia of infancy to cover all the cases in the group we have just been considering and the only disadvantage of adopting such a nomenclature is that it is apt to lead to confusion with the so-called splenic anæmia of adults. This would be unfortunate, for the two conditions are really entirely distinct. It would be going beyond the legitimate scope of these lectures to discuss whether the splenic anæmia of adults is a true pathological entity but most people will agree that the term is at least one of clinical usefulness as covering a group of cases which present a clinical "symptom-complex" in common. Many, indeed, would go further than this nowadays and, regarding splenic anæmia as merely the initial stage of what has been described as Banti's disease, would associate with it a constant course and a definite morbid anatomy. The splenic changes in Banti's disease indeed present many points of resemblance to those found in the group of cases peculiar to children which we have been considering. These changes have been summed up as follows:[23] 1. Atrophy of the Malpighian bodies, brought about either by an overgrowth of the connective tissue ensheathing the central artery or by an encroachment of fibrous tissue from the periphery. 2. Thickening of the capsule and the trabeculæ, the walls of the vessels and of the fine fibrous reticulum forming the walls of the spaces of the splenic pulp. 3. In a minority of the cases there is also a proliferation of the endothelium lining the splenic vessels and blood spaces of the pulp, the proliferated endothelium appearing in the form of large cells with clear protoplasm and a peripherally situated nucleus, the cells in some instances completely filling the blood space.

Here, again, then one finds an overgrowth of supporting

[19] Jahrbuch für Kinderheilkunde, ii., 1900, p. 297.

[20] It is noteworthy that those factors which I have already spoken of as being actively operative in the production of the chlorotic anæmia of rickets—viz., prolonged nursing and the occurrence of twin pregnancies—are also often found in the history of cases of splenic anæmia of infancy. The frequency of the disease amongst the Polish Jews in the East-end (on which Clive Riviere has also remarked) is probably due to the fact that very prolonged nursing is a habit of that race. It is interesting to observe that this association was pointed out so long ago as 1849 by Battersby. Writing in the *Dublin Quarterly Journal* for May of that year he says that "tumefaction of the spleen in children seems to be the consequence of undue lactation. I have notes of seven cases whose average duration of suckling is 19 months." He adds that these patients are truly chlorotic and invariably exhibit pica.

[21] Transactions of the Royal Medical and Chirurgical Society vol. lxxxvii., 1903.

[22] See discussion on Splenic Anæmia, Brit. Med. Jour., Sept. 12th, 1903.

[23] Trevor: Ibid., Sept. 12th, 1903.

tissue in the Malpighian bodies and throughout the pulp generally with an increase of fibrous tissue and a proportionate diminution of the adenoid constituents. It must be borne in mind, however, that but little diagnostic importance can be attached to fibrosis involving the trabeculæ and splenic pulp and to atrophy of the Malpighian bodies. As Rolleston[24] has pointed out, varying degrees of splenic fibrosis are met with in long-continued bacterial poisoning and fibrotic atrophy of the Malpighian bodies has been produced experimentally by Pilliet with metatoluylendiamin, paraphenylene, and sodium nitrate. With the morbid histology of the spleen, moreover, the apparent resemblance between Banti's disease or splenic anæmia ordinarily so-called and the splenic anæmia of infancy ceases. The blood picture in the two is totally different. In splenic anæmia of adults we have to deal with a slight diminution of red cells, a marked diminution of hæmoglobin, and a diminished number of leucocytes—a combination described by Senator as oligocythæmia, oligochromæmia, and leucopenia, which contrasts markedly with the great diminution of red cells, the presence of normoblasts, and the heteromorphous leucocytosis characteristic of the infantile disease. In addition to this the clinical course of the disorder is totally different. Splenic anæmia in adults is a very chronic condition which extends over years but is slowly progressive and, so far as we know, invariably leads to death. The splenic anæmia of infancy, on the other hand, is of much shorter duration and by no means progressively fatal but, on the contrary, is recovered from in a considerable proportion of the cases. If, then, these two conditions resemble each other only in the common factor of presenting some degree of anæmia along with enlargement of the spleen the next question which arises is: Does one ever meet in childhood with cases of splenic anæmia of the adult type? Occasionally, I think, one does. Hamill,[25] for instance, has reported the case of a boy, aged six years, who suffered from anæmia associated with great enlargement of the spleen and repeated hæmorrhages. The blood exhibited anæmia of the chlorotic type with leucopenia, but the relative proportion of the granular and non-granular cells varied at different examinations. He died four years later, death being preceded by the appearance of ascites. The necropsy showed fibrous hyperplasia of the spleen and an increase of connective tissue around the bile-ducts in the liver. Hamill does not attempt to classify this case but I think there can be no doubt that it must rank with the splenic anæmias of adult type.

Another case has been recorded by R. T. Williamson.[26] The patient was a boy, aged nine years, whose illness was of two years' duration. There was no evidence of syphilis or rickets. He presented great enlargement of the spleen but not of the lymph glands, with marked anæmia (3 030,000 red cells), and there was no leucocytosis (4000 per cubic millimetre, the lymphocytes being in slight relative excess). There was intermittent pyrexia. He died and the post-mortem examination showed that the Malpighian bodies in the spleen were fibrous, whilst the pulp contained many large cells inclosing red corpuscles. The marrow of the femur was dark red and "lymphoid" and there were some vegetations on the mitral valve and a few ulcers in the small intestine. This case also closely resembles the splenic anæmia of adults but it is difficult altogether to exclude ulcerative endocarditis which seems sometimes to be accompanied by great enlargement of the spleen without any leucocytosis.

In a very typical example of splenic anæmia terminating in Banti's disease described by Rolleston[27] and confirmed by a post-mortem examination the interesting statement is made that the patient, who was 20 years of age, had been an in-patient at the Hospital for Sick Children, Great Ormond-street, for a similar condition 11 years before. Cases of splenic anæmia of adult type do therefore seem to occur in childhood, but owing to the great rarity of that disease even in adult life it is difficult to say with what degree of relative frequency. As far as I can discover, however, such cases are not met with in infancy but only after the period of second dentition—that is to say, when the blood has assumed the adult characters. It is true that Hunt[28] has described two cases of splenic enlargement with anæmia in infants aged eight and 16 months respectively which he believes to have been examples of the adult form of the disease but the blood examination is not given in sufficient detail to enable one to form an exact judgment. So far as it goes one of them certainly seems to have been an ordinary splenic anæmia of infancy. It is true also that one meets with great enlargement of the spleen in infancy associated with more or less anæmia but no leucocytosis which present at first sight a resemblance to the splenic anæmia of adults. Examples of these have been given in Table III. There can be little doubt, however, that those are cases of the ordinary splenic anæmia of infancy on the way to recovery, for on following them out one can often find that the spleen gradually recedes behind the ribs until complete recovery is established. Others are probably merely examples of rickets associated with an unusual degree of splenic enlargement. In later childhood again one sometimes meets with puzzling cases in which there is enlargement of the spleen with more or less anæmia but which one hesitates to class as examples of ordinary splenic anæmia of adults. Some of these may possibly be examples of the primary splenomegaly—endothelial hyperplasia of the spleen—so well described by Bovaird,[29] but others are almost certainly of syphilitic origin. To the latter class the following cases probably belong.

CASE 1.—A boy, aged two and a half years, was said to have a lump in the abdomen since he was six months old. There was a definite history of inherited syphilis. He was only slightly anæmic, the red cells numbered 4,500,000, the hæmoglobin amounted to 55 per cent., and the white cells to 13,000 per cubic millimetre. There was a slight relative excess of lymphocytes. The spleen reached below the umbilicus and there were well-marked signs of rickets and a slightly bossed head. Under vigorous antisyphilitic treatment the spleen rapidly diminished and ten months later had entirely disappeared.

CASE 2.—A boy, aged 11 years, had had an enormously enlarged spleen without other symptoms for upwards of two years. The family history was indefinite but a brother had suffered from "bad eyes." There was no enlargement of the glands or of the liver. The red cells were 4,360,000, hæmoglobin 56 per cent., and white cells 4700; the polynuclear and uninuclear forms were about equal. His subsequent history could not be ascertained.

CASE 3.—A girl, aged 11 years, presented well-marked signs of congenital syphilis (notching of the teeth, interstitial keratitis, &c.). The spleen was enormously enlarged; the liver was large and irregular. The glands were not affected. The red cells and hæmoglobin were normal. The white cells numbered 8000 and a differential count showed 65 per cent. polynuclears, 31·7 uninuclears, and 3 per cent eosinophiles. She subsequently died rather suddenly when at home.

In the cases cited anæmia was not pronounced but in a series published by Chiari[30] in young adults anæmia was a marked feature and splenic anæmia was closely simulated. In all these cases the symptoms appeared to have come on about puberty.

LEUKÆMIA IN CHILDHOOD.

It cannot be said that recent work on leukæmia in the adult has tended to give a sharper definition to our knowledge of the diseases classed under that term or to clarify our notions of their pathology. On the contrary, the division of the leukæmias into two well-defined types which until recently was believed to hold good has been shown to be no longer tenable. The old division into splenic and lymphatic forms, based mainly on clinical differences, had to give way to the pathological classification of lymphatic and myelogenous leukæmia which rested upon the chief kind of cell found in the blood in each case and its supposed seat of origin. But these terms are tending in their turn to lose their applicability as the accumulation of cases and pathological material goes on. It seems no longer possible to speak of lymphatic leukæmia when in some quite typical clinical examples of that form of the disease the only pathological changes have been found in the bone marrow, whilst, on the other hand, the detection of "myelogenous" changes in the adenoid tissue in what seem at the bedside cases of pure myelogenous leukæmia render it difficult to assert dogmatically that this variety of the disease is always due to changes in the marrow alone. It would seem indeed as if the tendency of recent work were to show that the differentiation of function between the bone marrow and adenoid tissue was not so sharp as from the teaching of Ehrlich most people have been inclined to believe, and that in pathological conditions especially a considerable amount of vicarious action can take place in consequence of which the bone marrow no longer confines itself to the exclusive production of granular cells nor the adenoid tissue to the manufacture of non-granular cells and lymphocytes. If this be true of leukæmia in the adult one would expect *a priori* that it would apply with even greater force to

[24] Discussion on Splenic Anæmia, Ibid., Sept. 12th, 1903.
[25] Archives of Pediatrics, September, 1902.
[26] Medical Chronicle, vol. xviii., p. 103, 1893.
[27] Clinical Journal, 1902, vol. xix., p. 401.
[28] Transactions of the Pathological Society of London, vol. l., p. 209, 1899.
[29] American Journal of the Medical Sciences, October, 1900.
[30] Prager Medicinische Wochenschrift, No. 24, 1902.

leukæmia in childhood, for in the child, as we have already seen, there is reason to suppose that the normal differentiation of function on the part of the marrow and adenoid tissue respectively is less stereotyped than in the adult. We shall see, I think, that this expectation will prove to be correct. It will be convenient to consider first the two extreme and classical types of leukæmia, the myelogenous (so-called) and the lymphatic, and afterwards to glance at the atypical and intermediate forms of the disease.

MYELOGENOUS LEUKÆMIA.

One is struck, in studying the anæmias of childhood, with the extreme rarity of myelogenous leukæmia. A well-defined and relatively not very uncommon disease in adults, it is of the most infrequent occurrence in the child and in the period of infancy is hardly met with at all. The statements in text-books on this point which sometimes seem to point to a contrary conclusion cannot be accepted, for they are apt to be based upon cases described prior to the introduction of modern methods of blood examination, many of which in all probability were really examples of lymphatic leukæmia whilst others no doubt belonged to the group of cases already dealt with under the title of splenic anæmia of infancy. The only case I have seen myself was one which was recently under the care of Dr. Lewis Smith in the London Hospital and which is to be published by him in detail. It presented an extreme and characteristic example of the disease.

The patient, a girl, aged four years and 11 months, had suffered from enlargement of the abdomen for five and a half months. For the past four months she had wasted. There was no marked pallor, the liver and glands were not palpable, but the spleen was enormous, filling the whole left side of the abdomen. Examination of the blood showed the presence of 2,425,000 red cells, 25 per cent. of hæmoglobin, and 1,590,800 white cells. There were four normoblasts to every 100 white cells. A differential count showed the presence of 56·1 per cent. of neutrophile myelocytes, 3·9 per cent. of basophile myelocytes, 9 per cent. of eosinophile myelocytes, 30 per cent. of polynuclears, and 0·7 per cent. of lymphocytes. A few of the myelocytes showed mixed granulations.

As far as I can discover this is the most marked case of myelogenous leukæmia in a young child yet described. I have collected the following probably genuine cases from the literature. Cassel,[31] writing in 1898, states that the authentic cases up to that time were less than a dozen in all. He apparently includes in this number seven cases collected by Monti and Berggrün, none of which, however, can one regard as being quite certainly examples of the myelogenous form. Cassel adds an undoubted case of his own. The patient was a boy, aged eight years, who exhibited marked anæmia and great enlargement of the spleen but none of the liver or lymph glands. The blood showed 3,550,000 red corpuscles, 40 per cent. of hæmoglobin, and 500,000 white cells. Of these 69 per cent. were true myelocytes and 12 per cent. were eosinophiles. Polynuclears and mast cells were numerous but lymphocytes were very scanty. The patient was still alive when the paper was published. Baginsky[32] has described an undoubted case in a boy, aged nine years, who presented all the usual clinical features. The red corpuscles amounted to 2,133,000 per cubic millimetre and the white to 986,000. Of these 56·7 per cent. were myelocytes, 26·1 per cent. polynuclears, and 4·1 per cent. eosinophiles. The nuclei of the myelocytes stained deeply with tri-acid mixture and there were as a rule only indications of granules in the protoplasm. The case was lost sight of before its termination. Monti and Berggrün describe a case in a boy, one year old, which is probably genuine. He was the subject both of congenital syphilis and of rickets and exhibited enormous enlargement of the spleen with some increase in size of the lymphatic glands. The red cells amounted to 1,846 000 and the white to 66,422. The hæmoglobin varied from 23 to 28 per cent. Of the white cells the great majority were large mononuclear forms with fine neutrophile granules. The eosinophiles were also increased but the polynuclears and lymphocytes were diminished. In spite of the small total number of leucocytes in this case it was probably an example of true myelogenous leukæmia. Charon and Gratia[33] describe the case of a girl, aged eight years, who exhibited marked anæmia with great enlargement of the liver and spleen. A blood count made two days before her death showed 880,000 red cells and 305,000 white cells per cubic millimetre, of which 37·1 per cent. were myelocytes.

These cases—five in all—are the only genuine examples of pure myelogenous leukæmia in childhood which a fairly complete search of the literature has enabled me to discover,[34] and it will be observed that only one of them belongs to the period of infancy. Even assuming that a certain number have been missed the result fully justifies the statement already made that pure myelogenous leukæmia hardly occurs in early life. This fact in the natural history of the disease is certainly a remarkable one, for there is nothing in the bone marrow in childhood which would lead one to expect that it would be less likely to become the seat of a leukæmic process than the corresponding tissue in the adult, whilst the ease with which myelocytes appear in the blood in early life even in comparatively trivial degrees of anæmia would have prepared one for quite the contrary result. Until we have some definite information as to the true cause of leukæmia no explanation of the rarity of the myelogenous form in childhood is likely to be forthcoming, but it suggests at least that, as is perhaps the case with pernicious anæmia, the exciting cause of the disease is not operative at this time of life.

LYMPHATIC LEUKÆMIA.

When we turn to the so-called "lymphatic" form of leukæmia we are met with quite the opposite state of things. The comparative frequency of this form in childhood is just as striking as the rarity of the myelogenous variety. It is only in quite recent times indeed that the frequency of lymphatic leukæmia has been recognised. McCrae[35] in 1900 described a case and gave references to other 13 cases which had been published as occurring in children below the age of ten years up to that time.

Table IV. contains some of the most important cases in children published since McCrae's summary was made, whilst one meets in the literature with casual references to many others which have never been published in detail. The records of authentic cases, moreover, are being added to almost daily.

Clinically these cases conform to the characters of the acute form of the disease and they may be roughly divided into the three types described by Guinon and Jolly:[36] (1) those which exhibit profound anæmia with general glandular enlargement with a hæmorrhagic tendency in the later stages; (2) those in which the hæmorrhagic tendency is exhibited from the outset, petechiæ appearing early so that the case may resemble one of infective purpura; and (3) "pseudo-scorbutic" cases in which lesions in the buccal cavity are the most striking feature. The type of cell which predominates in the blood is the so-called large lymphocyte, many of which are probably really identical with the "lymphoid cells" of Wolff. Pathologically they show the changes which have been so often described as characteristic of the lymphatic form of leukæmia—viz., overgrowth of adenoid tissue generally with the appearance of foci of it in situations in which such tissue is not normally visible and a replacement of the normal bone marrow by lymphoid tissue.

No satisfactory explanation of the frequency of the lymphatic form of leukæmia in childhood can be given any more than of the rarity of the myelogenous variety. The fact, however, may be correlated with that of the great extent and activity of the adenoid tissue in childhood, to which reference has already been made and which render it peculiarly liable to become the seat of pathological processes of all sorts of which leukæmia is only one form. One is tempted to find in it also some support for the infective origin of the disease which has so often been advocated when one remembers the peculiar liability of children to infection, particularly such as finds access by the throat. On the other hand, those who see in lymphatic leukæmia a process resembling the production of a malignant growth and who speak of it as a "sarcoma of the blood" might point with equal truth to the frequency of that particular form of malignant growth in the earlier years of life. It may be, too, that, as Parkes Weber has suggested,[37] lymphatic leukæmia is to be looked upon as a less differentiated form of the leukæmic process than the myelogenous form of the disease.

[31] Berliner Klinische Wochenschrift, No. 4, 1898.

[32] Jacobi's Festschrift, p. 19, 1900.

[33] Bulletin de la Société des Sciences Médicales de Bruxelles, 1896, p. 63.

[34] References to other supposed examples—none of which, however, is sufficiently authenticated—will be found in Clive Riviere's paper in the Transactions of the Royal Medical and Chirurgical Society, vol. lxxxvii., 1903.

[35] Gilbert and Weil in a paper in the Archives de Médecine Expérimentale, tome ii., p. 157, 1899, state that up to that time about 60 cases of acute leukæmia had been recorded, of which five were between the ages of one and ten and 17 between 11 and 20 years of age.

[36] Revue Mensuelle des Maladies de l'Enfance, June, 1889.

[37] Transactions of the Pathological Society of London, vol. liv., p. 286, 1903.

TABLE IV.—CASES OF LYMPHATIC LEUKÆMIA IN CHILDHOOD.

No.	Author and reference.	Sex and age.	Total duration.	Clinical characters.	Blood.
1	Thomson and Muir (International Journal of the Medical Sciences, April, 1891).	M., 7 years 11 months.	About 5 months.	Enlargement of the liver, glands, and spleen; general scabies; irregular pyrexia; hæmorrhages.	Red cells, 2,500,000 to 721,250; hæmoglobin 40 per cent.; white cells, 93,000 to 379,000, mainly small lymphocytes; very few polynuclears and eosinophiles; a considerable number of large lymphocytes towards the end.
2	Fowler (Edinburgh Hospital Reports, vol. xiii., 1895).	F., 9 years.	6 weeks.	Extreme anæmia; no enlargement of the spleen or of the glands; hæmorrhage into one retina.	Red cells, 510,000; hæmoglobin 15 per cent.; white cells, 100,000; almost no polynuclears; large and small lymphocytes and large cells with pale, indented nuclei, some with basophile granules.
3	Bradley (New York Medical Journal, vol. lxx., p. 923, 1899).	M., 8 years.	8 ,,	Anæmia; great enlargement of the spleen; slight enlargement of the liver; enlargement of the glands in axillæ and groins; bleeding from the gums.	Red cells, 1,850,000; hæmoglobin, 18 per cent.; white cells, 85,000; polynuclears, 3 per cent.; large lymphocytes, 69 per cent.; small lymphocytes, 28 per cent.
4	Reimann (Wiener Klinische Wochenschrift, No. 39, 1899).	F., 9 years.	6 ,,	The spleen from two to three fingers' breadth below the ribs; slight enlargement of the liver and glands; purpuric hæmorrhages and epistaxis; some swelling of the gums, with bleeding.	Red cells, 1,200,000; hæmoglobin, 20 per cent.; white cells, 350,000; polynuclears predominated at first (mostly eosinophile) but towards the end lymphocytes were in large excess.
5	Pollmann (Munchener Medicinische Wochenschrift, No. 2, 1898).	F., 14 days.	Apparently congenital (mother's blood normal).	Petechial hæmorrhages; the liver and spleen were both much enlarged; right-sided endocarditis; the glands were not enlarged.	Red cells, 2,520,000; white cells, one to eight; almost all uninucleated forms with large nucleus and moderate protoplasm devoid of granules.
6	Guinon and Jolly (Revue Mensuelle des Maladies de l'Enfance, tome xvii., p. 262, 1899).	F., 15 years.	40 days.	Profound anæmia; the liver and spleen were both enlarged (slightly); glands (?).	Red cells, 685,000; hæmoglobin, 20 per cent.; white cells, 28,000; lymphocytes, 93 per cent; polynuclears, from 2 to 3 per cent.; large lymphocytes, from 3 to 6 per cent.; eosinophiles, from 0·1 to 0·2 per cent.; large mononuclears, 0·6 per cent.
7	Geissler and Japha (Jahrbuch für Kinderheilkunde. Band lii., p. 572, 1900).	M., 5 years.	8 weeks.	Pallor; the glands in the neck and groins were enlarged, not elsewhere; gradual increase in size of the liver and spleen till they reached the umbilicus.	Red cells, 158,000 (lowest count); white cells, 34,250 (highest count); in different counts 76 to 97 per cent. were uninucleated.
8	McCaw (Report of the Society for the Study of Disease in Children, vol. iii., p. 251, 1903).	F., 1 year 8 months.	5	No rickets or anæmia; the spleen was enormously enlarged; considerable general glandular enlargement; the liver was one inch below the umbilicus; subcutaneous hæmorrhages.	Red cells, 2,300,000; hæmoglobin, 39 per cent; white cells, 810,000, of which 99·2 per cent. were lymphocytes.
9	Author's case (unpublished).	F., 6 years.	11 ,,	Profound anæmia; gangrenous stomatitis; irregular pyrexia; the spleen was half-way to the umbilicus; the liver was three quarters of an inch below the costal margin; the glands were palpable all over; petechial and retinal hæmorrhages.	Red cells, 1,200,000; hæmoglobin, 10 per cent.; white cells, 170,000, of which 98 per cent. were lymphocytes (mostly small).
10	Author's case (unpublished).	M., 13 years.	7 months.	The spleen was just palpable; the liver was slightly enlarged; the glands were enlarged everywhere; hæmorrhages from mucous membranes.	Red cells, 2,000,000; hæmoglobin, 40 per cent.; white cells, 240,000, 98·7 per cent. being lymphocytes of varying size; polynuclears, 1·2 per cent.; occasional myelocyte and eosinophile cell seen; one normoblast to 105 white cells.
11	Kinhorn (Medical Record, July 12th, 1902).	F., 9 years.	Several months.	The spleen was large and firm; the liver was two fingers breadth below the ribs; the cervical and inguinal glands were enlarged.	Red cells, 3,360,000; white cells, 389,000, of which small lymphocytes were 48·7 per cent.; large lymphocytes, 49 per cent.; mononuclears, 1·3 per cent.; polymorphonuclears, 1 per cent.
12	Carpenter (Brit. Med. Jour., August 28th, 1903).	(?) –3½ years.	4 weeks.	Began with sudden pallor; the spleen was from two to three fingers' breadth and the liver two fingers' breadth below the costal margin; the glands were not enlarged; there were a few bruises on the legs.	Red cells, 1,568,000; hæmoglobin, 15 per cent.; white cells, 130,000, of which 99·18 per cent. were lymphocytes (mainly small).

In other words, we may really be dealing in it with an overgrowth of the original mother cells which are believed to be the progenitors alike of lymphocytes and of the more highly differentiated type of cell known as myelocytes. Lymphatic leukæmia would then be a return to the fœtal stage in which myelocytes have not yet appeared and such a relapse into intra-uterine methods of blood formation may happen more easily in the child than in the adult.

Compared with the acute variety of the disease chronic lymphatic leukæmia is of comparatively rare occurrence in childhood but not more so probably than in adult life. One is met here with the practical difficulty of assigning a limit of duration within which a case shall be regarded as "acute." Any such limits indeed must of necessity be more or less arbitrary in nature. I have met, however, with one case which can be fairly regarded as falling outside the sphere of the more acute type of the disease. It is included in Table IV. (Case 10). Except as regards their duration these cases present no essential difference from those of the more acute form, but the preponderating type of cell in the blood tends to be rather the ordinary small lymphocyte than the larger form of cell met with in the more acute variety of the disease. These cases are chiefly of interest as forming a supposed link between true leukæmia and Hodgkin's disease but to this point we shall return when we consider that disease in detail.

MIXED FORMS OF LEUKÆMIA.

So long as it was believed that the two great seats of production of white cells—the bone marrow and adenoid tissue—were functionally entirely independent and that the former in any circumstances could produce only granular and the latter non-granular cells, so long was it believed that myelogenous and lymphatic leukæmia were two totally distinct conditions which did not coexist and between which no intermediate type was found. But later investigations into the mode of origin of the white cells have rendered it probable that this functional specialism on the part of the

adenoid tissue and marrow is not so absolute as had been supposed. It is coming to be believed that both myelocytes and lymphocytes have originally a common parent type of cell and that although it is true that in the marrow the development of these is normally in the direction of producing granular cells (myelocytes) and in the adenoid tissue of producing non-granular cells (lymphocytes), yet upon occasion the parent cells may develop in one direction only in both situations, so that the bone marrow may also produce lymphocytes and the adenoid tissue myelocytes. Coincidently with the rise of this view clinical evidence has been accumulating which points to the actual existence of cases in which the blood presents the picture of a mixed form of leukæmia, both myelocytes and lymphocytes being present in large numbers. Wolff[38] has recently published a criticism of alleged cases of this sort and has come to the conclusion that some of them at least must be regarded as genuine examples of mixed types of leukæmia. Now, as has already been indicated, it is just in childhood when the division of labour between the blood-forming organs is presumably less highly specialised, when myelocytes so readily enter the blood stream, and when lymphocytosis is so common, that one might expect cases of mixed type to occur. Wolff, it is true, declines to admit cases in infancy as affording real evidence of the occurrence of mixed leukæmia because of the confusion and perplexity introduced by cases of the so-called von Jaksch's anæmia already considered. It appears to me, however, to be rather an arbitrary proceeding to rule out such cases. True myelogenous leukæmia is, as we have seen, almost unknown in infancy and it may be that when the disease does occur at this period of life it tends to assume not a pure but a mixed form. Case 16 of my series (Table III.) may perhaps have been of that nature. Morse[39] has reported an interesting case which raises a similar problem. It was that of a boy, one year of age, the exact duration of whose illness was uncertain. He was decidedly rickety and presented enormous enlargement of the spleen with some increase in size also of the liver and lymphatic glands. The blood contained 2,900,000 red cells per cubic millimetre and 48,000 white cells. The differential count showed 23·4 per cent. of small lymphocytes, 8·1 per cent. of large lymphocytes and transitionals, 21·4 per cent. of myelocytes, 46·5 per cent. of polynuclears, and 0·6 per cent. of eosinophiles. There was marked poikilocytosis and many nucleated red corpuscles were present, several of them being megaloblasts. The comparatively low percentage of lymphocytes and the high proportion of myelocytes in this case are certainly unusual even for a severe example of splenic anæmia of infancy, and one is inclined to agree with Morse that the case is rather to be regarded as a mixed form of leukæmia. Fowler[40] has recorded a very similar case in a girl, aged 13 months. There was only slight rickets but the spleen was enormous and the liver and lymph glands were also distinctly enlarged. Purpura and epistaxis were repeatedly observed. Repeated examinations of the blood gave red-cell counts varying from 2,950,000 to 3,950,000 per cubic millimetre, while the leucocytes varied between 23,400 and 58,000. The differential counts varied a good deal, the highest percentage of lymphocytes found being 46. Whilst the myelocytes on one occasion rose to 14 per cent. eosinophiles were not increased. Nucleated red cells were very numerous, nearly all of them being normoblasts. The post-mortem appearances are said to have been those of leukæmia. Fowler regarded the case as one rather of leukæmia than of splenic anæmia from the characters of the blood observed during life. Cabot mentions similar cases.[41] Even were one to admit that these cases are to be regarded as examples of severe splenic anæmia rather than instances of mixed forms of leukæmia the same cannot be said of very similar cases met with at a later period of childhood when splenic anæmia has ceased to occur. Stewart and Campbell[42] have recorded such a case in the person of a boy, aged six years, whose illness lasted only three weeks. He presented marked anæmia, with severe and repeated epistaxis. The spleen was not enlarged but there was some enlargement of the submaxillary glands noted. The blood, which was examined just before death and therefore after repeated hæmorrhages, contained only 750,000 red cells per cubic millimetre with 20 per cent. of hæmoglobin and 40,000 leucocytes per cubic millimetre. Of these 25 per cent. were small lymphocytes, 45 per cent. were polynuclears and the remaining 30 per cent. was made up of myelocytes, 3 per cent. being eosinophilic. The red cells showed considerable inequality in size but none in shape. There were no megaloblasts. A case such as this is obviously very difficult to classify. It is evidently one in which the bone marrow is mainly involved and is so far to be regarded as myelogenous but the high relative number of small lymphocytes would point to some implication of adenoid tissue as well. Another of Fowler's cases[43] is more conclusive. It was that of a girl, five years of age, with enormously enlarged spleen, slightly enlarged liver, and slight hard enlargement of all the superficial lymph glands in whom the illness ran a course of 14 weeks. The red corpuscles were below 3,000,000 and the white corpuscles from 240,000 to 257,000 per cubic millimetre. The differential counts showed: small lymphocytes, 7 to 13 per cent.; large lymphocytes, 32 to 57 per cent.; polynuclears, 16 to 22 per cent.; myelocytes, 12 to 27 per cent.; eosinophile myelocytes, 0·7 to 3·4 per cent.; eosinophiles, 0·6 to 2·6 per cent.; and mast cells, 3 to 3·4 per cent. This seems to be clearly an example of a mixed form of leukæmia and was so regarded by Fowler. Many similar cases could be quoted from the literature[44] but enough has been said to show that the frontiers of leukæmia in childhood are very ill defined. Cases occur intermediate in type between splenic anæmia on the one hand and true leukæmias on the other and also between the two classical forms of leukæmia themselves. Such cases may find an explanation if we regard the myelocytes and the lymphocytes as both arising from a common parent type of cell which we may speak of with Wolff as a "lymphoid" cell, which is probably identical with many of the so-called "large lymphocytes" spoken of in the above differential counts. To this common origin both types of leukæmia could be traced back, myelogenous leukæmia being due to the production from it of myelocytes in excess and lymphatic leukæmia to an excessive production of lymphocytes, whilst in the intermediate forms either the parent cells themselves enter the blood along with myelocytes or both myelocytes and lymphocytes are produced from the common cell in excessive number. The trend of opinion which is supported by such cases as those described is certainly in favour of attaching more importance to the type of cell found in the blood and less to its supposed seat of origin, and if I might venture upon a prophecy it is that in future the leukæmias will be classified on the former basis instead of as hitherto on the latter and that we will speak of myelocytic, lymphocytic, and mixed-cell leukæmias, rather than of myelogenous or lymphatic. At all events, it is only along such lines that order is likely to be introduced into the present confusion which surrounds the classification of those anæmias of children which are attended by a marked increase of white cells in the blood.

[38] Zeitschrift für Klinische Medicin, Band xlv., p. 385, 1902.
[39] Boston Medical and Surgical Journal, vol. ii., p. 133, 1894.
[40] International Clinics, vol. ii., 1901, series ii., p. 125.
[41] Clinical Examination of the Blood, fourth edition, p. 454.
[42] Montreal Medical Journal, May, 1902.
[43] International Clinics, vol. iii., 1903, series xiii.
[44] Examples of mixed leukæmia in the adult have been published by Simon (American Journal of the Medical Sciences, 125, p. 984, 1903) and by Wilkinson (THE LANCET, June 20th, 1903, p. 1739), but in both of these the case began as apparently one of myelogenous leukæmia and ended by assuming the lymphatic type. Other examples are referred to by Fowler (loc. cit.).

ALEXANDRA HOSPITAL FOR CHILDREN WITH HIP DISEASE.—A festival dinner in aid of this well-known hospital in Bloomsbury was held on April 27th at Prince's Restaurant, Piccadilly. The Duke of Marlborough presided. A large and distinguished company assembled, including the Duke of Beaufort (president of the hospital), the Duchess of Beaufort, the Marchioness of Lansdowne and the Marchioness of Granby. In proposing the toast of "The King" the Duke of Marlborough said that His Majesty had displayed interest in the hospital by opening one of its wings and had indirectly contributed towards its welfare, as a large annual subscription was received by the hospital from King Edward's Hospital Fund. During the existence of the Alexandra Hospital, which was opened in 1867, many young people had been made healthy and strong who would otherwise have been hopeless cripples. The hospital was in a sense an institution of national importance as the patients came from all parts of the country. It possessed nearly 100 beds and in order to maintain them an expenditure of nearly £6000 a year was entailed. Mr. W. H. Whitfield, the chairman of the committee of management, stated that the income from invested funds amounted to only £300 a year. As a result of the dinner subscriptions and donations amounting to £3600 were announced.

The Erasmus Wilson Lectures

ON

ACUTE INFECTIVE GANGRENOUS PROCESSES (NECROSES) OF THE ALIMENTARY TRACT.

Delivered before the Royal College of Surgeons of England on March 21st, 23rd, and 25th, 1904.

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LECTURE I.

Delivered on March 21st.

MR. PRESIDENT AND GENTLEMEN,—In his presidential address to the Clinical Society of London in 1896 Dr. Buzzard,[1] among other things, discusses whether "those who follow the profession of medicine have no right to speak of their work as science." I should like to point out that through the practice of the art of surgery the surgeon has many opportunities of making numerous scientific observations on man. The subject to which I wish to direct your attention in these lectures is that of acute infective necrosis, or gangrene, of the various regions of the alimentary tract. The life or death of a part of the intestinal canal is one of the greatest importance, especially in abdominal surgery, and through the action of the swift process, already mentioned, are brought about some of the most terrible tragedies in the annals of life.

Every surgeon in the practice of his profession as an operator is in a position to make observations on his cases in a way similar to those which the physiologist and pathologist make on the animals upon which they experiment in the laboratory. Be it, however, clearly understood that the similarities rest on the opportunities and not on the methods. For the surgeon does his work to cure or to alleviate the condition for which his services are required, whilst the others plan their experiments without regard to any benefit which might accrue to the subject thereof. The results of the latter, however valuable, are applied by inference, or indirectly, to man; those of the former have the great advantage of being directly applicable to the subject on which they were made. Every surgeon is in a position to note the results of operations as well as the pathological conditions for which he did the operations. In many cases the results are those of formal procedures and may be of small value, but no one can fail to add to this, especially through the medium of abdominal work, in the way of meeting the unexpected, being the victim of circumstances, mishaps, misfortunes, and lastly, but by no means the least, mistakes. The evidence upon which these lectures are based has been derived in such ways from the study of man during the last five years. And, further, I would like to acknowledge yet again my thanks to the staff of St. Thomas's Hospital for the opportunities of observation which have been so freely accorded me. And rather with the object of emphasising this line of research, which is the peculiar property of the surgeon, I have abandoned the more popular method of experimentation and have performed no operations on animals. But please understand clearly that I in no way under-estimate the very great value of such methods of research. As my observations have been made on the living subject at the operating table I am naturally unable to produce specimens to show; my statements will find evidence in ordinary surgical experience.

THE CLINICAL IMPORTANCE OF ACUTE INFECTIVE NECROSIS IN ACUTE ABDOMINAL WORK.

The death or gangrene of part of the alimentary tract forms one of the most important fields which, by reason of the recent rapid advances, abdominal surgery has taken within its scope. The resulting catastrophes, such as appendicitis, perforations of ulcers, &c., have long been known, as well as the enormous mortality which accompanied them. With increase of our knowledge of the pathology of these cases and improvements in operative technique, the death-rate has of later years been very considerably lowered. Unfortunately, the clinical signs, by means of which we must try to recognise the internal progress of the pathological process are, by their very nature, relatively coarse, late, and inexact means of gaining that urgently required information on the possession of which is of vital importance to the patient. The manifestations of an acute abdominal disease are, unfortunately, often very obscure as to their origin, and much valuable time is lost before the decision is made as to whether the abdomen must be opened or not. The tremendous charge in the mortality made by such delay is not even yet quite fully appreciated.

All acute abdominal crises begin similarly with shock, collapse, vomiting, &c., which symptoms have been called by Sir Frederick Treves "peritonism." This may be termed the first stage. Later, in the second stage, the diffuseness of the manifestations ceases and localising signs and symptoms appear. But it must be remembered that though the outward appearances become more local the inward infection may be spreading. At this period a diagnosis may be made. Later, as the infection becomes more and more diffuse, the signs again become more and more general and the diagnosis is again impossible. It is, in consequence, a difficult task to obtain figures which can give anything like a truthful idea of the practical importance and frequency of the disease which is the subject of these lectures. To help to meet this disadvantage, during the years 1900, 1901, and 1902 a careful record was kept of every acute abdominal case which was admitted to St. Thomas's Hospital. In this way I have obtained a series of 456 consecutive cases quite unique in that the diagnosis was verified in every case by operation or by post-mortem examination. Practically every case came either under the personal observation of my colleague Dr. A. E. Russell or myself. It is our good fortune to be able to place before the medical profession a large and unique series of acute and consecutive abdominal cases spread over a period of three years. The distribution of these cases may be briefly reproduced:—

Table of Acute Abdominal Cases.

Appendicitis	37 per cent.
Intestinal obstruction	24 ,,
Intussusceptions	15 ,,
Perforations	11 ,,
Gynæcological	6 ,,
Peritonitis of unknown origin	2 ,,
The rest	5 ,,

Cases of gangrene or necrosis of the alimentary tract vary considerably in their severity—that is to say, acute, subacute, and more or less chronic clinical varieties are recognisable. As it is the first of these classes to which I wish mainly to direct attention an attempt has been made to estimate the relative practical importance of the pathological factor of acute necrosis in these acute abdominal cases. Briefly, it forms, as a primary process, as in appendicitis, &c., 50 per cent. of these cases and is also secondarily associated with many of the other causes. The large percentage of 50 indicates the great frequency of this necrobiotic process as a primary change, and its occurrence in instances of acute abdominal disease as a secondary change still further emphasises the vast importance of the process. A number of cases are lost and the patients die in consequence of this secondary change, and in abdominal work one must guard against its occurrence just as surely as we try to cure the primary lesion. It is desirable that the full practical import be recognised before the more scientific aspect of the question is touched upon. As a primary affection it may be seen in the perforation of gastric, duodenal, and other ulcers, of carcinomatous ulcers, appendicitis and diverticulitis, &c.; as a secondary process in strangulated herniæ, volvulus, intussusception, strangulation by bands, perforation of the cæcum in intestinal obstruction lower down in the large intestine, &c.

To proceed to its more strict definition the process may be defined as one of death or necrosis of the tissues of the gut, dependent in the acute cases mainly on the action of septic organisms, and in subacute or chronic ones mainly upon the interference with the blood-supply. In the former

[1] Transactions of the Clinical Society of London, 1896, vol. xxix., p. 55.

the organisms act primarily on the tissues, and through inflammation and thrombosis secondarily cause interference with the blood stream; in the latter the blood-supply is interrupted primarily and then the organisms act. Mr. W. Watson Cheyne, in his excellent article in Sir Frederick Treves's "System of Surgery," divides the causes of gangrene or necrosis into three classes—the direct, the indirect, and the specific. But, unfortunately, such a classification can only stand so long as inquiries into it are not prolonged or pertinent. For then is seen the impossibility of discriminating between the three divisions. I would like to suggest that, broadly speaking, two extremes exist: 1. In this class the necrosis or death is due to the deprivation of the tissue of blood, aseptic death. 2. In this class the necrosis is due to the action of micro-organisms, septic death. In between these two extremes there exists every variety of mean or intermixture of the factors. The above may, from the point of view of the tissues, be termed the local factors. But the general condition of the individual will take a more or less important secondary part in the process of local death. The flora of the intestines and the fluid of the peritoneal cavity are such that pure anæmic or dry gangrene is unknown there. The omnipresence of moisture and organisms renders the gangrenes in this situation of the moist variety. In reality the tissues of the alimentary tract are subject to the same laws of life and death as are those of the rest of the body and it is my intention to apply to them the above general principles. The branch of inquiry with which this first lecture will deal is the relationship between the integrity of the gut and interference with its blood-supply. Upon this subject surgery has a good deal to say. And an endeavour must be made to reduce the subject into the compass of these lectures. It will therefore be unnecessary to apologise further for any omissions.

The great clinical difference that is noticed between gangrene or necrosis due to cutting off of the blood-supply and that due to activity of bacteria is the different times taken by these factors to produce that result. The former is slow in action, the latter very rapid; and between these extremes there are all varieties of the intermixtures of the factors which are naturally by far the most common and an attempt has been made to investigate the first to begin with and then to pass on to consider the second class.

The Embolism and Thrombosis of the Visceral Vessels of the Abdomen.

Embolism and thrombosis of the abdominal visceral vessels form an obvious line of inquiry into the nature of the relationship which exists between the integrity of the intestinal wall and interference with the blood-supply. At the first it was my intention to serve up this subject neatly and completely with its literature. But the number of the cases recorded of late has increased so wonderfully that the time has now passed when this would be worth the print and paper, except perhaps in a monograph on the subject. Dr. J. Moyes[2] in 1880 reported on 64 cases; Watson[3] in 1894 collected 27 cases; Deckart[4] in 1902 66 cases; Koebling,[5] also in 1902, 64 cases; but the most extensive is by Gallavardin[6] in 1901 whose zeal enabled him to unearth 126 cases. Since these authors a large number of further examples have been published and a few unpublished ones referred to, so that the actual number will be about 150. With the exception of a few instances, such as those of Elliott,[7] Gordon,[8] and Anfrecht,[9] every reported case has been fatal. Early surgical intervention has saved these; almost all have been reported merely for their pathological interest. It is in the history of most diseases that they are first published as unique pathological curiosities. Slowly pathological interest leads to the awakening and kindling of clinical acumen, and, lo, it is found to be a common disease. Appendicitis forms the most exemplary instance of this history.

Looking amongst the reported cases of embolism and thrombosis it is noticed that some died within 24 hours of the onset of symptoms, some on the second day and others on the third, fourth, and so on. Yet one of Elliott's patients[10] died as late as the twelfth day, one of Kiliani's[11] on the fifteenth day, Munro's[12] on the twenty-second day, and so forth. Some have presented clinical pictures of acute abdominal disease, some of subacute, and some of almost chronic. And yet in all these varieties the diagnosis of embolism has been rendered certain by necropsy. One is forced to wonder if, after all, spontaneous recovery is not possible in the face of such variations in the length of the illness. In most cases of embolism the clot comes from the left auricle and takes its origin in mitral disease. And I remember well, when clerking for the late Dr. W. Miller Ord at St. Thomas's Hospital, a little boy with mitral disease who had a sharp attack of abdominal pain and was ill for a few days. The diagnosis made was that of appendicitis, but can it have been that a small embolus lodged in a branch of one of the mesenteric arteries?

Before inquiring into what the pathologists may have to say to this suggestion it is desirable that some account should be given of the important points in the work already done. Blockage of the arteries is more common than that of the veins in the proportion of about 5 to 1. Involvement of the superior mesenteric artery bears as high a proportion as about 40 to 1 to that of the inferior mesenteric artery. This is extremely interesting and the anatomical reasons given for this are like so many anatomical reasons for surgical events, in that they lack perspective and are more or less exaggerated. The real explanation seems to me to be that these statements are made only from a study of fatal cases. For the appreciation of this line of argument it is desirable that a brief description of the anatomical distribution of these mesenteric arteries should be given. The superior mesenteric artery springs from the front part of the aorta, about half an inch below the origin of the cœliac axis and opposite the first lumbar vertebra. It then passes obliquely downwards and forwards in front of the left renal vein, the lower part of the head of the pancreas, and the third or transverse part of the duodenum. Opposite the latter it enters the mesentery of the small intestine, along the root of which it continues to descend, giving off branches into the mesentery to the small intestine from its left and convex side and retroperitoneally to the large intestine on its right or concave side. The branches to the small intestine divide and form four or five arterial arcades, the last of which is within half an inch of the small intestine, and from it straight branches are distributed to the walls of the gut. These straight branches within the gut wall communicate freely with the vessels of the segments above and below. Anatomically the small intestines have wide and excellent blood-supply, expressive of very many alternative routes. On the concave right side of the artery far fewer vessels are given off, thus giving to us an index of, or method of gauging, the severity of the embolic lesion. The first artery to come off is the inferior pancreatico-duodenal, the next is a large branch, the middle colic, then the right colic and the ileo-colic, and finally, the terminal branches to the cæcum and appendix. The main artery as it proceeds diminishes fairly rapidly in size. The embolus may be situated in the main trunk so as to block the inferior pancreatico-duodenal artery, or the middle colic, or the right colic, or the ileo-colic, or the terminal branches. And in each case a corresponding amount of small intestine will have its blood-supply cut off on account of the involvement of the corresponding number of the vasa intestini tenuis. The superior mesenteric artery supplies with blood no less than about 25 feet of the length of intestine and is the sole artery to that region. The inferior mesenteric artery supplies the descending colon, iliac and pelvic colon by itself, but the rectum gets no fewer than three arteries, the superior rectal from the inferior mesenteric, the middle rectal from the anterior division of the internal iliac or its inferior vesical branch, and the inferior rectal from the internal pudic branch of the same division of the internal iliac artery.[13]

The duodenum gets its blood-supply from two sources—namely, the hepatic branch of the cœliac axis and from the

[2] Moyes: Glasgow Medical Journal, 1880, vol. xiv.
[3] Watson: Boston Medical and Surgical Journal, 1894, vol. cxxxi.
[4] Deckart: Mittheilungen aus den Grenzgebieten der Medicin und Chirurgie, Band v.
[5] Koebling: Beiträge zur Klinischen Chirurgie, 1902, Band xxxiii., pp. 518–534.
[6] Gallavardin: Gazette des Hôpitaux de Paris, 1901, pp. 929–936 and 967–966.
[7] Elliott: Annals of Surgery, 1895, vol. xxi., p. 9.
[8] Gordon: Brit. Med. Jour., 1898, p. 1447.
[9] Anfrecht: Deutsches Archiv für Klinische Medicin, 1902, Band lxxii., p. 588.
[10] Elliott: loc. cit.
[11] Kiliani: Annals of Surgery, 1903, part cxxvii., p. 110.
[12] Munro: THE LANCET, Jan. 20th, 1894, p. 147.
[13] The old name of "hæmorrhoidal" for these arteries has been rejected in accordance with Professor Alexander Macalister's suggestion.

superior mesenteric artery. The stomach is supplied by the branches of the cœliac axis. The enormous importance of the integrity of the superior mesenteric as compared with that of the other visceral arteries is therefore easily seen, as having manifold the largest and longest distribution it naturally happens that if the main stem is occluded there will be infinitely greater difficulty in the successful establishment of an anastomotic circulation than there will be in the cases of the other visceral arteries which supply smaller lengths of bowel. Anatomically it is seen that nature has been very prolific in supplying means for this end in the anastomotic arcades, &c. Physiologically the case is not so clear. Litten[14] in 1875 showed that in dogs ligature of the stem of the superior mesenteric artery led to necrosis of the small intestine and the death of the animal, whilst he also found that such was not the case when the cœliac artery or the inferior mesenteric artery was occluded. Consequently he argued that though anatomically not an end artery the superior mesenteric was one functionally. Emil Fricker[15] in Berne in 1902 performed a number of ligations of arteries supplying the stomach and duodenum, entirely confirming Litten's results. Hence there seems reason to suspect that lesions of visceral arteries other than the superior mesenteric need not be fatal, and consequently, as our knowledge of the cases under discussion is based solely on post-mortem records, this artery will be found responsible in, to say the least, an undue proportion.

The next point which interests us is the evidence for the existence of an anastomotic circulation. First, there is the length of time elapsed after the lodgment of the embolus at which gangrene has been found. Lothrop[16] records the absence of gangrene of the intestine after four and five days have elapsed since the onset of the illness, Osler[17] after seven days, Munro[18] after 22 days, and so on. Secondly, with an embolus in the main trunk of the superior mesenteric artery, practically the whole small gut and the large as far as the splenic flexure may be gangrenous, yet with a precisely similarly situated lesion only a small segment of ileum has been gangrenous after a history of several days' illness (Koster[19]); or in thrombosis of the superior mesenteric vein Bradford[20] found only 18 inches of jejunum gangrenous on the fifteenth day; or, in the case of occlusion of the main trunk of the inferior mesenteric artery only three or four inches of the descending colon were gangrenous on the twelfth day (Elliott[21]), so that there is ample evidence to prove the existence of power to form an anastomotic circulation, which will be successful if the area to be resupplied is not too great, as seems to be the case with blockage of the main trunk of the superior mesenteric artery, though not so when only a branch is involved. So my little boy with mitral disease already mentioned who had an attack of abdominal pain may have had an embolus after all.

The ease or difficulty for the establishment of a collateral circulation is insufficient to account for all the variations found in these cases. Some light as to the possible cause is shown by extremely rapid cases which exhibit an acute infective necrosis of the bowel. For instance, Sievres[22] found incipient gangrene of the gut in a man, 56 years of age, who died within 24 hours of the occurrence of embolism of his superior mesenteric artery. Collier and Burgess[23] record a somewhat similar case. Dr. Frederick Taylor's[24] case died in 30 hours and showed similar necrotic signs, and many other authors have found most extensive gangrene present by the second to the third day. These acute cases are in all probability due to the action of micro-organisms on the tissue of the bowel wall, especially that of pyogenic cocci which have become active on account of the anæmic condition of the bowel brought about by the interruption of the blood-supply. Their absence, or better comparative absence, may account for the subacute cases of longer clinical duration. As yet, however, no bacteriology has been done in these cases.

[14] Litten: Virchow's Archiv, 1875, Band lxiii., p. 289.
[15] Emil Fricker: Dissertation, Berne, 1902.
[16] Lothrop: Boston Medical and Surgical Journal, 1894, vol. cxxxi., pp. 567–569.
[17] Osler: Principles and Practice of Medicine, 1901, p. 546.
[18] Munro: loc. cit.
[19] Koster: Deutsche Medicinische Wochenschrift, 1893, No. 21, p. 525.
[20] Bradford: Transactions of the Clinical Society of London, 1898, vol. xxxi., p. 203.
[21] Elliott: Loc. cit.
[22] Sievres: Berliner Klinische Wochenschrift, 1902, p. 183.
[23] Collier and Burgess: Medical Chronicle, 1902, vol. xxxvi., p. 296.
[24] Taylor: Transactions of the Pathological Society of London, 1880–81, vol. xxxii., p. 61.

Pilliett[25] has suggested that the thrombosis may have been due to the action of organisms. Pakes's[26] case, in which organisms were found in an ante-mortem clot, renders this suggestion probable. However, the majority of the cases are due to embolism and not to primary thrombosis.

The relationship of the areas of infarction or anæmia and the intensity or degree of the bacterial infection offers an explanation for all the varieties found in the clinical features already mentioned. But that the bacterial factor is not always all-important is shown by the fact that the part of the gut found gangrenous when the superior mesenteric artery is obstructed is almost always that part of the ileum which is about the middle of the area to be resupplied with blood and therefore the last which the anastomotic circulation will reach. And also, the centre of the ileum is not one of the great breeding places for organisms such as the cæcum is, yet the former becomes gangrenous and the latter does not. The formation of an anastomotic circulation is sometimes much impeded by the formation and the extension of thrombi secondary to the embolus. When the occlusion has been slow and the "botanical" condition of the bowels good the collateral circulation will be found to work admirably.

Having now illustrated the formation of an anastomotic circulation in obstruction to the visceral vessels by means of the variations in the time elapsing before the occurrence of the gangrene, the extent of the gangrene, the situation of the gangrene, the immunity with lesions to visceral vessels other than to the widely distributed superior mesenteric artery, &c., some most remarkable cases are brought forward which illustrate the continuation of life after the total obliteration of the visceral arteries. Virchow[27] has reported two cases in which he found post mortem that the main trunk of the superior mesenteric artery had been converted into an impervious fibrous cord. The intestines appeared normal. The clinical records of the previous illness are wanting. Similarly Tiedemann[28] has given an account of a kindred case. Professor Chiene[29] of Edinburgh reported fully a still more remarkable case of a similar and more extensive condition. As the record is in a journal not often consulted by medical men the account is briefly reproduced here. The specimen was found in the anatomy rooms in a female subject who had died from "paralysis" at the age of 65 years. The aorta was extensively atheromatous. There was an aneurysm on the abdominal aorta and the inferior mesenteric artery arose from the lower part of the sac. The cœliac axis arose in its usual position, but for its first half inch was converted into a fibrous cord. The branches beyond this point were fully injected with paint so that there had been established a perfect anastomotic circulation. The occlusion of the trunk of the axis must have robbed the stomach of its entire blood-supply. Presumably the process must have been very slow to enable the second blood-supply to be established without giving rise to any necrosis of the viscus. Both the superior and inferior mesenteric arteries were similarly converted into impervious fibrous tissue close to their origins, their branches being full of the injection of paint. This woman had had the most serious interference possible with the arterial blood-supply of the whole of her alimentary tract, the process of occlusion going on presumably at the same time in each of the three vessels. Yet there were no changes in the intestines such as to call attention to them. Professor Chiene's account of the course of the anastomotic channels is as follows: "This case is probably the only recorded example of an obliteration of the three anterior visceral branches of the abdominal aorta at their origins and of a consequent enlargement of the secondary anastomoses for the supply of the viscera, the stomach, liver, spleen, pancreas, and duodenum being supplied by the left lower intercostals and from the left renal and suprarenal arteries which inosculated with the lumbar arteries of the same side, the remainder of the intestines receiving its supply from the internal iliacs through a large plexus surrounding the rectum, except the cæcum and ascending colon which received its blood-supply from the last dorsal artery on the right side." This confirms the existence of a free communication between the visceral vessels insisted on by Sir William Turner[30] in

[25] Pilliett: Progrès Médical, 1890, No. 25.
[26] Pakes: Transactions of the Pathological Society of London, 1900.
[27] Virchow: Quoted by Litten, loc. cit.
[28] Tiedemann: Ibid.
[29] Chiene: Journal of Anatomy and Physiology, 1869, vol. iii., p. 65.
[30] Turner: British and Foreign Medico-Chirurgical Review, July, 1863.

1863. Professor Chiene's case is much more extensive than either those of Virchow or Tiedemann and therefore has been quoted to illustrate that a properly functional anastomotic blood-supply can be constructed during the slow obliteration of the arteries which supply the alimentary tract from the œsophagus to the anus.

To sum up the chief points which an examination of the records of examples of obstruction of the mesenteric vessels has shown the following tables may be formed:—

CLINICAL TABLE.

1. It is most common in men past middle life.
2. It is most common secondary to valvular disease of the heart, especially mitral disease.
3. The onset is generally sudden with symptoms of peritonism.
4. In one class the picture is one of intestinal obstruction or peritonitis due to appendicitis or the perforation of a gastric ulcer.
5. There is also another class in which blood is passed per rectum and which signifies infarction of the bowel.
6. Subacute and chronic cases are seen as well as the most acute.
7. In some cases it is most probably spontaneously recoverable from, especially if only a small area of the bowel is rendered bloodless.

PATHOLOGICAL TABLE.

1. For a constant situation of the embolus in the superior mesenteric artery as in the main trunk all varieties of clinical cases have been reported, from the most acute and fulminating to cases like Professor Chiene's that recovered apparently without obvious symptoms.
2. With a precisely similar lesion some subjects die in 30 hours and some not for from 12 to 20 days.
3. Gangrene of the gut has been noticed to occur within 30 hours and sometimes not after 22 days.
4. A collateral circulation can be formed in slowly developing cases of visceral vascular obstruction—e.g., Professor Chiene's case. And even in more acute instances an attempt at a collateral circulation is made.
5. The superior mesenteric artery is almost invariably picked out for the site of the embolus in fatal cases, possibly because it will always cause symptoms and almost always death, which need not occur with involvement of the inferior mesenteric and its branches or those of the cœliac axis.
6. The explanation of the individual variations, clinical and pathological, seems to depend upon the pathogenicity of the bacteria present in the gut as to the severity, rapidity, or other characters of the cases. On the bacteriology of this affection there is no work done.

[The last two sections of this lecture dealt with the subjects of "Thrombosis of the Mesenterial Vessels of Strangulated Hernia" and "Wounds and Surgery of the Mesentery," in so far as they illustrated the relationship which exists between the integrity of the bowel wall and interference with its blood-supply.]

A COMPARISON OF THE ANIMAL REACTIONS OF THE TRYPANOSOMES OF UGANDA AND CONGO FREE STATE SLEEPING SICKNESS WITH THOSE OF TRYPANOSOMA GAMBIENSE (DUTTON).

A PRELIMINARY REPORT.[1]

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THE strains we have used in our work are as follows. Three strains of *Trypanosoma gambiense* from Gambia. (See below.) Two strains from Uganda: (1) from the cerebro spinal fluid of a case of sleeping sickness; and (2) from the blood of a case of trypanosome fever. We take this opportunity of thanking Colonel D. Bruce, R.A.M.C., F.R.S., to whom we are indebted for these two strains. Four strains from the Congo Free State: (1)[2] from the cerebro-spinal fluid of a case of sleeping sickness; (2)[2] from the blood of a case of trypanosome fever; and (3) and (4) from the blood of two natives at present under observation in Liverpool.

Trypanosoma gambiense (Dutton).—Three strains of *Trypanosoma gambiense* were brought home by Dr. J. E. Dutton and Dr. J. L. Todd from their Senegambia expedition[3]; of these three, which are called "Gunjur," "Lammin," and "Q" strains, we have worked almost entirely with the "Gunjur" strain which was derived from the boy at Gunjur, Case 4.[4] Since that time the strain has been passed through a great number of animals under varying conditions; the direct strain is that passed from rat to rat to ascertain whether increased virulence or attenuation of the trypanosomes could be produced. It is not our purpose to present here the results but we believe that a definite increase of virulence as well as an attenuation can be achieved, the former by the passing of the trypanosomes through a large series of animals of the same species and the latter by constantly changing the species of animal employed.

Rats.—Young rats, 30 experiments, shortest incubation two days, longest 35, average from four and a half to seven and a half days. Usual duration from 20 to 41 days. Some have survived 132 days. Adult rats, 33 experiments, from four to 47 days, average eight and a half days. Duration from 45 to 388 days. Some rats inoculated in Senegambia in November, 1902, still survive, but their blood is negative microscopically and non-infective. The parasites are present in the blood of both young and adult rats in fair quantities, though in many of the animals they are not constantly present, being at one time numerous in the blood and a few days later absent altogether or only demonstrated after a most careful search.

Mice.—25 experiments. Incubation period from one to 37 days; average from four to seven days. Usual duration from 11 to 14 days. In some cases the parasites have been very numerous and continually present in the blood, but very often the animal shows only a few parasites or there may be a marked irregularity as to the appearance and disappearance of the organisms.

Guinea pigs.—Ten experiments. Three guinea-pigs have become infected after 12, 53, and 73 days respectively and have lived three, four, and eight months. One, Experiment 114,[5] inoculated May 13th and positive 12 days later never showed parasites again in its peripheral blood until Sept. 11th. On Nov. 1st 30 to a field[6] were observed. The trypanosomes continued to increase in numbers and on Dec. 3rd reached 80 to 100 to a field. On the 20th the numbers decreased and death ensued on Jan. 4th. A guinea-pig, Experiment 133,[7] inoculated on July 20th from a rat, was positive on Sept. 11th, parasites became very numerous on Nov. 1st (20 to field), and continued so to the end on Nov. 20th. Rupture of the spleen was the cause of death. Four guinea-pigs inoculated 124 days ago with large quantities of blood containing numerous trypanosomes have remained negative up to the present time despite re-inoculations. Their controls—i.e., rats and rabbits—became infected in the usual time. Three guinea-pigs inoculated on March 7th from rat 279a with large doses of blood containing countless trypanosomes showed parasites in their blood in 12 hours in two cases and in three days in the other. The parasites were seen in their blood for a few days (about 24 to a cover). Since March 20th these animals have been negative.

Rabbits.—Incubation period from five to 15 days; average from seven to nine days. Duration from 50 to 128 days. In some cases the organisms have been fairly constant in the peripheral blood, in others they appear and disappear at irregular intervals, and the numbers vary from a few to 20 to a field. In these animals loss of weight and diminution of red cells and hæmoglobin are constant features of the disease. In only one rabbit, which lived 128 days, have we noticed a purulent discharge from the nose, eyes, &c., with loss of hair, and then only in the last six weeks of its existence.

Cats.—Two experiments, both inoculated intravenously.

[1] In the forthcoming Johnston and Thompson Yates Laboratories Reports a fuller report will be published together with serum and agglutination experiments and the results of therapeutic experiments.

[2] Sent to us by our expedition to the Congo Free State.

[3] J. E. Dutton and J. L. Todd: First Report of the Trypanosomiasis Expedition to Senegambia (1902), Liverpool School of Tropical Medicine. Memoir XI.

[4] Ibid. [5] Ibid.

[6] We have throughout used ¾ inch square cover-slips and examined with ⅛ inch objective and No. II. eye-piece.

[7] Dutton and Todd, loc. cit.

Experiment 422 inoculated March 12th from a mouse. Trypanosomes were observed on March 19th. Parasites were constantly present, the numbers usually being small. The temperature rose on March 20th to 104·4° F. and on the 22nd to 104·6°. Some loss of weight and anæmia have been observed. Experiment 447, inoculated March 22nd from a rat; positive on March 26th. Parasites were constantly present and in fair numbers—often one to each field. No rise of temperature was observed.

Puppies (from three to seven months).—Three experiments. Incubation periods, five days after intravenous and ten days after intraperitoneal and subcutaneous inoculation. Duration from 33 to 43 days. In two cases the parasites were to be found almost constantly and in fair numbers which increased in the later stages of the disease; before death the blood became negative again. In the remaining experiment trypanosomes were only to be found at intervals and in small numbers. Loss of weight occurred in all three and in two cases there was a marked diminution in the number of red corpuscles with a corresponding decrease in the percentage of hæmoglobin. Subnormal temperature was recorded in one case before death.

Goat.—Small female, Experiment 518. Inoculated intraperitoneally on April 14th from a rat showing numerous trypanosomes. Strain "Lammin." Parasites appeared in the blood on April 21st but have not been found since. No rise of temperature nor other symptoms have yet been observed.

Donkey.—Inoculated subcutaneously on Feb. 23rd from a rat. Positive on March 9th. Parasites were found on rare occasions and then only in very small numbers. There was no definite rise of temperature. Some diminution in the percentage of hæmoglobin and the number of red cells has been observed.

Monkeys.—*Macacus rhesus*, Experiment 311. This monkey had been infected by Dr. H. E. Annett with blood from the European Case H. K.[9] Parasites were found only at intervals and in small numbers though the animal appeared to be very ill and emaciated; at the end of nine months it had quite recovered. In January, 1904, rats inoculated from it during the preceding four months not having become infected we decided to attempt to reinfect the animal. On Jan. 29th, 13 months after its original infection, it was inoculated with blood from a rabbit ("Gunjur" strain). On Feb. 6th parasites were found in the blood; they were almost always present, though not in great numbers, up to March 24th, from which date until death, on April 3rd, the blood remained negative. Very marked œdema of both upper and lower eyelids, intraorbital space and eyebrows occurred on March 27th; this persisted for three days; no parasites were to be found in the œdema fluid. No other symptoms other than loss of weight and anæmia were observed.

Macacus rhesus, Experiment 517. Inoculated intraperitoneally on April 14th from a rat showing numerous trypanosomes. Strain "Lammin." Parasites appeared in the blood on April 16th. Death occurred on April 18th from purulent and hæmorrhagic peritonitis caused by a parasite found in the intestinal walls and not yet identified.

A chimpanzee, Experiment 134,[9] inoculated by Dutton and Todd in July, 1903. Parasites were rarely seen in the blood and only in small numbers. After the third week in September trypanosomes were found only once in the blood, on Jan. 27th, when one was seen. On this date the temperature rose from its usual level of between 99° and 100° to 103·6° F., falling again next day. Parasites were not seen again before death which occurred from broncho-pneumonia on Feb. 10th.

Sub-inoculations.—Two mice and a rat inoculated on Nov. 20th did not become infected. Of two mice and a rat inoculated on Nov. 27th the mice did not become infected, while the rat was positive once, Jan. 7th, when one trypanosome was found in its blood. Two mice and a rat inoculated with large doses of heart blood immediately after death never became infected.

Symptoms.—There were occasional rises of temperature to 102° to 103° F. with no apparent cause. On one of these occasions (Nov. 27th) one trypanosome was found in the blood. There were temporary loss of weight and appetite and falling off in condition towards the end of December, 1903. The animal subsequently improved and regained appetite. A blood count in July, 1903, showed hæmoglobin 85 per cent. and red cells 8,360,000 per cubic millimetre. One made on Feb. 6th, 1904, showed hæmoglobin 60 per cent. and red cells 4,540,000 per cubic millimetre.

Horse.—Experiment 87. The small bay stallion[10] inoculated in West Africa by Dutton and Todd in February, 1903, and brought to England in July, 1903, is alive and in good condition and seems to have recovered. Trypanosomes have not been seen in its blood since it was brought to England. Two rats inoculated from it at the end of July became infected. Rats and mice inoculated on Oct. 2nd and Nov. 6th have not become infected; and one large rat and two small ones inoculated on April 22nd have not so far become infected. On Oct. 9th, 1903, the weight of the horse was 513 pounds. On April 26th, 1904, it was 506 pounds. The animal shows no symptoms, its temperature is regular (from 99° to 101° F.), and its appetite is good. There is no œdema and its coat is in good condition.

STRAIN DERIVED FROM CEREBRO SPINAL FLUID OF UGANDA CASES OF SLEEPING SICKNESS.[11]

Rats.—1. Young rats: 12 experiments. Incubation period from four to 13 days; average length nine days. Parasites were fairly constantly present but usually in rather small numbers. Duration from 14 to 41 days. 2. Adult rats: 12 experiments. Incubation period from four to 20 days; average length 13 days. Parasites were fairly constantly present in small numbers in the early stages of infection, later they became rare. Duration from 16 to 149 days.

Mice.—Incubation period from five to six days. Parasites were rarely present in the blood after the first appearance. Duration was from 19 to 47 days.

Guinea-pigs.—Four experiments. None yet infected. Five weeks have elapsed since inoculation. Sub-inoculations into mice and rats so far have been unsuccessful. No symptoms have yet been observed.

Rabbits.—Incubation period from seven to nine days. Parasites are constantly present, tending to become more numerous as the disease advances. Marked and fairly rapid loss of weight is observed. The rabbits are still living. Anæmia is a noticeable symptom.

Cats.—One experiment. A large grey cat was inoculated intravenously from a rat. Incubation was six days. The temperature rose on the evening of the sixth day to 105° F.

Dogs.—One experiment. Inoculated intravenously from a rat showing fairly numerous parasites. Trypanosomes appeared in the blood on the seventh day. The temperature has remained normal. The animal has so far shown no symptoms.

Puppy.—One experiment. Age four and a half months. Inoculated on March 20th from a rat. Trypanosomes appeared in the blood on March 27th and have since been constantly present, although not more numerous than from two to five to a field. The temperature has varied between 101° and 103° F. There was no rise with the appearance of parasites in the blood. Diminution in hæmoglobin and red cells has been observed. The animal has lost strength considerably.

Goat.—One experiment, a female. Incubation period nine days. Parasites were fairly constant in the blood during the first week of infection but afterwards were found only rarely. There was no rise of temperature with the appearance of parasites in the blood but five days later, when eight trypanosomes were seen to the cover, the temperature rose to 104° F. No other symptoms have as yet been observed.

Donkey.—Inoculated on March 28th subcutaneously from a rat. On April 7th the temperature rose to 102·7° F. and on the 9th to 103·2°. A rat inoculated from the donkey on April 8th showed parasites on the 23th. The incubation period in the donkey was therefore ten days. Parasites were seen for the first time in its blood on April 18th and again on the 22nd.

Monkeys.—1. *Cercopithecus callitrichus*. Inoculated intraperitoneally on April 2nd from a rat. Trypanosomes appeared in the blood on the 6th and were constantly present for a week, when they became rare, occasionally being absent altogether. On the 7th the temperature rose to 105·5° F. and has since been irregular (with occasional rises to 104° to 105° and over). No other symptoms have so far been observed, the appetite is preserved, and the animal is in good condition. 2. *Cercopithecus callitrichus*. Inoculated

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H. E. Annett. First report of the Trypanosomiasis Expedition to Senegambia, 1902, Liverpool School of Tropical Medicine, Memoir XI., p. 47.

[9] Dutton and Todd, loc. cit.

[10] Dutton and Todd loc. cit.

[11] This was sent to us in a rat which had been inoculated from a monkey infected from the cerebro-spinal fluid of a case of sleeping sickness; it was therefore only in its second passage.

intraperitoneally on March 6th from a rat showing very few parasites. Trypanosomes did not appear in the blood before death which took place from dysentery on the 10th. A monkey (*Macacus rhesus*), a rabbit, and one out of four rats inoculated with large doses of its heart blood became infected. Two guinea-pigs inoculated at the same time are still negative. Two mice inoculated with its blood died without becoming infected. 3. *Macacus rhesus.* Inoculated on March 10th intraperitoneally and subcutaneously with the heart blood of preceding monkey. Parasites were found in the blood on March 18th and were constantly present, although never very numerous, until April 6th when the animal died. On March 18th the temperature rose to 104·6° with the appearance of parasites in the blood. During the last two days of life the temperature was subnormal (from 95° to 93°). Diminution of red cells and hæmoglobin was observed. Post mortem, purulent peritonitis was found due to a parasite found in the intestinal walls and not yet identified. 4. *Macacus rhesus.* Inoculated on March 14th intraperitoneally with the heart blood of a rat. Trypanosomes appeared in the blood on the 18th and were fairly numerous for four days; on the 31st there were from 13 to 18 to a field. They became rarer again before death which occurred on April 1st. The temperature rose on the 18th and on the 19th reached 105·8°, there being six parasites to a field at the time. The red cells decreased from 4,000,000 to 2,500,000 per cubic millimetre and hæmoglobin from 50 to 27 per cent. 5. *Macacus rhesus.* Inoculated subcutaneously on April 22nd with blood from a rabbit showing many trypanosomes. This monkey is not yet infected (April 27th).

STRAIN DERIVED FROM CEREBRO SPINAL FLUID OF SLEEPING SICKNESS, CASE 6,[12] IN THE CONGO FREE STATE.[13]

Rats.—23 experiments. Incubation period: young rats from three to nine days; adult rats from four to ten days. Duration from 17 to 176 days. Some of the animals have shown parasites fairly constantly and in moderate numbers; in others the organisms have disappeared for some time or have been present in small numbers. We have rats which have lived as long as 176 days but in the blood of such animals the parasites are either found only in rare instances or not at all.

Mice.—Incubation from four to 11 days. Duration over 92 days. Parasites usually rare.

Guinea pigs inoculated more than 50 days ago have not shown parasites as yet.

Rabbits.—Incubation after intravenous inoculation from three to four days. There was a slight rise of temperature on the day of infection and the following day.

Cats.—Two experiments. 1. Intravenous inoculation from a rat. Incubation period eight days. Parasites were constantly present. On the twelfth day there were five to a field. 2. Intraperitoneal inoculation from a rat. Incubation period eight days. No symptoms have as yet been observed.

Dogs.—Two experiments. 1. An adult dog inoculated intravenously from a rat. Parasites were seen on the fifth day. They were not numerous at first but are increasing and constantly present. 2. A puppy, four months old, inoculated intraperitoneally from a monkey. Incubation period eight days. No symptoms have as yet been observed.

Goat.—An adult, inoculated intraperitoneally from a monkey. The temperature rose on the evening of the fifth day to 106·5° F.; next day the temperature was 104·2°; a rat inoculated on this day is not yet positive. Parasites have not yet been seen in the blood of this goat.

Monkeys.—1. *Macacus rhesus.* Experiment 497. Inoculated intraperitoneally from a rat. Incubation period six days. Parasites have been constantly present in the blood and have steadily increased in numbers. On the day of the appearance of the parasites the temperature rose to 106° F. 2. *Cercopithecus callitrichus.* Inoculated Feb. 15th intraperitoneally from a rat. Parasites appeared in the blood on Feb. 20th. The temperature on the 21st was 103·8° F. Trypanosomes were constantly present in fair numbers until April 5th. Since then they have been rarely found and in only small numbers. No symptoms were observed. The animal was in good condition. There was slight diminution of hæmoglobin and red cells.

[12] Dutton, Todd, and Christy: Human Trypanosomiasis on the Congo, &c., Brit. Med. Jour., Jan. 23rd, 1904, pp. 186–188.

[13] This strain was sent to us in a rat inoculated with cerebro-spinal fluid from a case of sleeping sickness.

STRAINS DERIVED FROM THE BLOOD OF CASE 4[14,15] AND FROM TWO CONGO NATIVES AT PRESENT UNDER OBSERVATION.

Rats.—Incubation period from four to 11 days, average about seven days; duration, some of the animals have survived after 87 days. In these animals trypanosomes have been scanty in the blood, with periods of some days to even weeks when none were to be found. This perhaps may be accounted for by the fact that the majority of the animals have been direct inoculations from the natives, whereas the sleeping sickness and *Trypanosoma gambiense* strains have been passed through a series of animals.

Mice.—Parasites were always very rare and the duration was indefinite in direct inoculations. In mice inoculated from one of the guinea-pigs sent to us from the Congo Free State (see below) the incubation period was three days and parasites were more frequently present.

Guinea pigs.—Two guinea-pigs inoculated by us directly from the natives and two young guinea-pigs inoculated from monkeys have been negative for a period of 146 days. Two adult guinea-pigs inoculated from Case 4[15] on the same day by the members of the Congo expedition and sent home while still negative have shown parasites for the first time in their blood on the seventy-ninth and 134th days after inoculation. No symptoms have as yet been observed. They are still living 152 days after inoculation.

Rabbits.—Incubation, direct inoculations nine and 11 days; sub-inoculation from rat ten days. Duration from 21 to 87 days. Parasites have been fairly constantly present but only in small numbers. Loss of weight, slight rise of temperature, and anæmia have been the only symptoms observable.

Monkeys.—*Macacus rhesus.* Two have been inoculated intraperitoneally directly from the natives. Experiment 331. Inoculated on Feb. 9th. Parasites appeared in the blood on the fifth day. On the next day the temperature rose to 104·9° F., the following day it registered 105·8°; at the same time the parasites were observed to increase in numbers. Trypanosomes were constantly present at first. On March 5th there were from 25 to 30 to a field. About the middle of March the trypanosomes became scanty and were not found at all after March 17th. Death occurred on March 25th. Rises of temperature were observed in this monkey coinciding with temporary increase of numbers of parasites in the blood. Experiment 316. Inoculated on Feb. 6th. Parasites appeared on the 13th and at the same time the temperature began to rise and on the 19th it registered 104°; up to the end of March parasites were constantly present in its blood, since that date they have been scanty and sometimes absent. On March 27th marked œdema of the upper and lower eyelids, especially the left, was observed. This persisted for three days; the puffiness was confined entirely to the eyelids; no parasites were found in the œdema fluid. At this time the appetite was poor and the animal seemed to be failing. From April 15th to 22nd parasites were present in fair numbers again, but are now once more scanty. No rise of temperature was associated with this temporary increase. Slight diminution of hæmoglobin and red cells has been observed. The animal is now in better condition than it was a month ago.

STRAIN DERIVED FROM THE BLOOD OF TRYPANOSOME FEVER CASES IN UGANDA.

Rats.—Incubation from 24 to 31 days. Duration from one to four months. This strain was an attenuated one and has died out. Parasites were rarely present and only in very small numbers.

COMPARISON OF SYMPTOMS IN ANIMALS INOCULATED WITH THE ABOVE DIFFERENT STRAINS.

It will be seen that our results have been practically the same whatever the strain used. In rats and mice the same chronic disease, periodicity in appearance of parasites, and absence of symptoms are in all cases observed as were described by Dutton and Todd. M. Brumpt and M. Wurtz have described[16] very marked symptoms in mice and rats inoculated from Congo sleeping sickness cases—e.g., progressive emaciation, intermittent paralysis of the posterior

[14] Received in a rat inoculated directly and therefore in its first passage.

[15] Dutton, Todd, and Christy, loc. cit.

[16] Brumpt et Wurtz: Maladie du Sommeil Expérimentale, &c., Comptes Rendus de la Société de Biologie, tome lvi., 1904, No. 12, Avril 1er, pp. 567–73.

quarters, œdema of the perineum, and sometimes acute nervous affections. We have observed none of these symptoms; occasionally we have noted slight œdema post mortem, but never in sufficient degree to be detected before death. In guinea-pigs there is with all strains the same lengthy incubation period. In those infected up to the present (with Gunjur and Congo blood strains) there is the same more or less chronic disease, characterised by loss of weight and constant presence of parasites in the blood. In rabbits we have produced with all strains the same chronic disease with fairly constant presence of parasites, loss of weight, and anæmia. In cats the disease is the same with all strains, with rise of temperature on appearance of parasites, fairly constant presence of parasites, and absence of other symptoms so far as we have yet observed. In dogs and puppies there are no differences to be noted. Incubation periods are the same and whatever strain be used there is the same constant presence of parasites in the blood, with loss of weight and anæmia. In goats and donkeys no differences have been observed between the strains used. In monkeys infection is readily produced with all strains, even with very small doses, and parasites are fairly constantly present in the blood, often in considerable numbers. Similar symptoms are observed with the different strains—viz., slight loss of weight, anæmia, rise of temperature especially with the first appearance of parasites in the blood, and occasionally localised œdema. We have observed no marked tendency to sleep in our monkeys; when a monkey is ill it sits on its haunches with its head between its knees; this position, which has been termed the typical sleeping sickness position, is not characteristic of trypanosomiasis or "sleeping sickness"; it is the position assumed by any sick monkey from whatever disease it be suffering. We have noted no nervous symptoms at all.

In stained specimens we have not observed any differences between the trypanosomes of Uganda and Congo sleeping sickness cases on the one hand and *Trypanosoma gambiense* (Dutton) on the other. In the same species of animals and at corresponding stages of the infection the size and appearance of the former trypanosomes are precisely the same as those of the latter as described by Dutton and Todd and since observed by us. In rats inoculated either directly or from monkeys inoculated directly they present the same stumpy and long forms, the former being more numerous in the early stages than in the later. After passage through some generations of rats the stumpy forms show the same tendency to disappear. In rabbits trypanosomes of all strains show the same preponderance of short stumpy forms as compared with rats, mice, and guinea pigs, while in guinea-pigs, so far as we have yet observed, there is the same greater tendency to length in most of the forms met with. In no animals infected with either the Uganda or Congo sleeping sickness trypanosome have we ever seen any form differing in measurements or appearance from *Trypanosoma gambiense*.

Pathological lesions.—In none of our animals have we found anything differing from the lesions described by Dutton and Todd. Enlargement of the spleen is a feature in all the animals, more especially in rats and mice. In a guinea-pig, Experiment 133 (Gunjur strain), which died 42 days after infection, rupture of the spleen was found, the rupture extending directly across the organ on its upper surface and near the posterior end for about one and a quarter inches. A profuse hæmorrhage occurred and the animal bled to death. No history of an injury is known. Another guinea-pig inoculated with *Trypanosoma dimorphum* (Dutton and Todd)[17] has died from rupture of the spleen. This case will be published in a forthcoming report on *Trypanosoma dimorphum*. The glands are very little, if at all, enlarged and there are no hæmorrhagic glands to be met with as in animals infected with *Trypanosoma dimorphum*. Petechial hæmorrhages are rarely seen. In monkeys the mesenteric glands are enlarged but this is without significance, as all our monkeys were infected with intestinal parasites. No macroscopical changes in the nervous system have been noted. In none of our animals, whether allowed to die or killed for special purposes, have we been able to find trypanosomes in the cerebro-spinal fluid, although the blood may have contained many trypanosomes, nor have any of the animals inoculated with this fluid ever become infected.

In the majority of animals which have died we are unable to say definitely that trypanosomiasis was the sole cause of death. Very frequently an intercurrent affection has occurred which, the animal's vitality having become impaired, has caused death. We would instance in rats broncho-pneumonia, caseous lung disease, and enteritis. In rats which have survived a few to many months it is exceedingly rare to find a single parasite,[18] nor has the negative blood appeared to be infective. Experiments are being conducted along these lines. In the majority of cases those rats which have been negative for months die without the presence of trypanosomes being again recognised. In some cases, however, rats which have been negative for months have at death once more shown parasites. As instances of this the following experiments are given.

Rat. 95a[19] ("Q." strain) was inoculated on March 17th, 1903, from horse, Experiment 87; incubation period eight days; parasites were found at irregular intervals and in small numbers. On Sept. 13th, 1903, a single parasite to a whole cover-slip preparation was seen and the animal continued negative until its death on March 24th, 1904, 365 days after infection. At the necropsy a few parasites were found in the heart. Animals inoculated from it have not yet shown the infection.

Rat, Experiment 89[20] ("Lammin" strain). Inoculated Feb. 26th, 1903, from rat 26; incubation 18 days. Trypanosomes were present in its blood until April 21st. From that time parasites were never seen except on the following dates, July 27th, Sept. 7th, and Nov. 1st, 1903, until its death on March 15th, 1904, 366 days after infection. At the necropsy complete red hepatisation of the whole of the left lung was found. The left pleural cavity contained over five cubic centimetres of slightly yellowish clear exudate containing one parasite to three fields. Animals inoculated with this exudate became infected and from these sub-inoculations we have been able to infect a goat, Experiment 518, and a monkey, Experiment 517.

We have observed that animals with extraordinary numbers of trypanosomes in their blood usually exhibit some lesion which tends to impair their vitality. The following experiment is a good example of this. A rat, 279a ("Gunjur" strain), inoculated on Dec. 30th, 1903, from a guinea-pig became positive on Jan. 7th, 1904. From that time until it was killed on March 22nd the parasites were constantly present in increasing numbers in its blood. At the necropsy caseous lung disease was very far advanced, involving both lungs. Its blood on examination showed trypanosomes in countless numbers. Two rats, two mice, 3 guinea-pigs, one rabbit, and a puppy were all inoculated intraperitoneally with heart blood. 12 hours later the mice and rats, the rabbit and two guinea-pigs were found to be positive, the rats and mice having as many as three to 11 to a field, the rabbit 240 to the cover-slip preparation, and the two guinea-pigs eight to the cover. The puppy did not show parasites in its blood until five days later.

Very little, if any, immunity is conferred by infection with *Trypanosoma gambiense*. The two following experiments are of interest in this connexion.

1. A piebald rat was inoculated directly from Mr. Q. by Dutton and Todd on Nov. 3rd, 1902. Parasites were found in its blood on Nov. 12th and again on Feb. 27th, 1903. After this the blood was always negative. On Nov. 23rd, 1903, it was reinoculated intraperitoneally from a rat ("Gunjur" strain) showing very numerous trypanosomes. It became infected and on Dec. 9th its blood was swarming with trypanosomes. Death took place on Dec. 26th.

2. A monkey (*Macacus rhesus*) infected by Annett from H. K., (Dutton's original case) in 1902 recovered, its blood being non-infective to rats. On Jan. 29th, 1904, it was reinoculated (Experiment 311), from a rabbit ("Gunjur" strain) and became infected (see above).

As one would expect, there is no transmission of immunity to offspring. Several of the young rats which we have infected have been born from parents which either were infected at the time or had recovered from an infection. And one guinea-pig (Experiment 216) which we infected with "Gunjur" strain was born from a guinea-pig infected at the time (also with "Gunjur" strain). There is a certain amount of natural immunity or resistance to the human trypanosome to be met with in individual rats and other animals. Every now and then we have come across animals which have exhibited this feature. For example, of two rats A and B of the same size, inoculated at the same time with equal amounts of virulent blood from an infected animal, A will become infected while B remains uninfected or shows a prolonged incubation period. Again, A receives a larger dose than B; it frequently happens that B will show the infection earlier than A. Guinea-pigs show considerable resistance to infection. As instances of this we would mention those inoculated from Rat 279a (see above). Baboons (*Cynocephalus sphinx*) have up to the present been absolutely refractory.

CONCLUSIONS.

1. The trypanosomes found in (*a*) cerebro-spinal fluid of Uganda sleeping sickness cases, (*b*) cerebro-spinal fluid of Congo Free State sleeping sickness cases (*c*) blood of Uganda trypanosome fever cases, and (*d*) blood of Congo Free State trypanosome fever cases, are all identical in animal reactions and morphology with *Trypanosoma gambiense*. The specific name *gambiense* (Dutton) must therefore for the future include the trypanosomes from the above-mentioned sources.

2. There seems to be no acquired immunity against infection.

3. There is no transmission of immunity to offspring.

4. An animal which seems to have recovered may months later show parasites once more, apparently as the result of lowered vitality.

[17] Laveran et Mesnil: Comptes Rendus de l'Academie des Sciences, tome cxxxviii., 1904, p. 732.

[18] This is also the case in other animals. See chimpanzee experiment.

[19] Dutton and Todd, loc. cit.

[20] Ibid.

YEOVIL HOSPITAL.—A new operation theatre at this hospital, erected at a cost of over £1000 as a memorial of the King's accession and the restoration of peace in South Africa, was formally opened on May 4th by the Hon. Mrs. Arnold de Grey in the presence of a large gathering.

A CHINESE REMEDY FOR HYDROPHOBIA.

BY VIDAL G. THORPE, M.R.C.S. ENG., L.S.A. LOND.,
FLEET SURGEON, R.N.

SOME time ago I was told of a remedy for hydrophobia which was used by the natives in this part of China. It was said to be a secret in the sole possession of one family whose ancestral home is Tungchow Foo in the province of Shantung, and had been passed down from mother to daughter for the last 400 years. The last possessor of the secret had no daughters and revealed it to her youngest son who now lives in Wei-Hai-Wei. The remedy was said to consist of a powder made from a certain hard nut grown in the province which was softened by boiling in an earthenware pot, no kind of metal being allowed to touch it, then grated on the outside of the basin and reduced to a pulp, which was dried and put up in packets for future use, or at once administered to the sufferer who, if necessary, was tied down and the remedy forced down his throat. The patient was said to fall into a deep sleep, in which he sweated profusely and awoke cured. No money was taken in payment, the possessor of the secret trusting to gain merit in the next world after death. I was assured that cures were authentic; my informant, a Scotch lady, who had lived many years in China, had a Chinese servant who was bitten by a mad dog and was treated and recovered; a woman, bitten at the same time not treated died with all the symptoms of hydrophobia. My friend, at my request, very kindly managed to procure me an interview with the owner of the secret, who brought me his basin and three powders and three nuts. I was astonished to find that they were the seeds of a species of strychnos, probably strychnos nux vomica. The coarsely ground fibrous powders gave the tests, as far as I was able to carry them out, for strychnine. Each nut was about five-eighths of an inch across and weighed 19 grains. The powders weighed 14, 15, and 16 grains respectively. It would be interesting to know what the exact dose of the alkaloid in each powder is. The proportion, I believe, as a rule varies between 0·2 and 0·5 per cent., which would give from $\frac{1}{30}$rd to $\frac{1}{12}$th of a grain of strychnine in each powder.[1]

I can find no account of the treatment of hydrophobia by strychnine in the books at my disposal, unless we except curara which was at one time used as a remedy in this terrible disease; a species of strychnos is said to be a potent element in its composition. The narcotic and sudorific properties spoken of above seem also to be unknown at the present time, yet curiously enough the writer of the article "Nux Vomica" in "Chambers's Cyclopædia" of the year 1786, the four volumes of which I possess, lays greater stress on these than he does on its poisonous properties. He states that "they are of a strong narcotic quality so as to be ranked in the number of poisons." After describing the round, flat, grey, mouse-coloured seeds he states that "Hermannus, botanic professor at Leyden, who has written expressly on it, says that the *vomic nuts* of Timor and Ceylon are for the human species excellent sudorifics, and are also to be ranked among diuretic medicines. Fallopius relates that it was given with success in the plague; that in doses from a scruple to half a drachm it procured a plentiful sweat, in which case the patient recovered." But no mention of its use in hydrophobia is made in this article nor in the one devoted to the description and treatment of that disease. I have also consulted several authorities on China and though the drug certainly finds a place amongst native medicines I can find no reference to its use in this disease nor that it is at all used by native practitioners, at least in this part of China. Some of the symptoms of hydrophobia bear a certain resemblance to those of poisoning by strychnine and it would therefore almost appear as though the principle of *similia similibus curantur* has been applied by the Chinese in this case. There is no doubt that in regard to other remedies they have a firm belief in this doctrine.

Wei-Hai-Wei, China.

[1] Fleet Surgeon Thorpe inclosed one uncrushed seed and one crushed. The powdered nut weighed 0·925 gramme and the uncrushed nut 1·270 grammes, the total weight being 2·195 grammes. The two when extracted gave 2·60 per cent. of mixed alkaloids. Allen states: "The alkaloids in powdered commercial nux vomica ranged from 2·56 to 3·57 per cent." The alkaloids extracted gave the characteristic reaction of brucine and strychnine, the former being in decided excess.—ED L.

ALIENS, DIRT, AND DISEASE.

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OPHTHALMIC SURGEON TO THE BELGRAVE HOSPITAL FOR CHILDREN; CHIEF CLINICAL ASSISTANT, ROYAL LONDON OPHTHALMIC HOSPITAL; DEMONSTRATOR OF PATHOLOGY IN THE MIDDLESEX HOSPITAL; LATE EXAMINER, NATURAL SCIENCES TRIPOS, UNIVERSITY OF CAMBRIDGE.

IN the debate on the Aliens Bill in the House of Commons on April 25th the Right Hon. James Bryce is reported as saying "that evidence and statistics alike went to show that Russian and Polish Jews were generally healthier than English workers, especially in regard to contagious diseases."[1] I notice that Mr. Bryce is reported in the same terms by the *Daily Mail*; since such redoubtable antagonists as the *Daily Mail* and the *Daily News* are agreed on the matter we may take it that Mr. Bryce did utter this opinion. Recently I have made an investigation into the influence of such factors as age, sex, and social conditions on the incidence of disease of the eye. I shall here give my results as far as the influence of social conditions is concerned.

ALIENS AND NATIVES.

By the permission of Mr. W. T. Holmes Spicer I have examined all the letters of new patients attending his clinic at the Royal London Ophthalmic Hospital for the year 1902. The clinic is one of 12 and it is held on Wednesdays and Saturdays. On Wednesdays the proportion of alien patients to native is 1 in 30 and on Saturdays it rises as high as 1 in 3. The patients numbered 2751. Of these I find 2124 were natives and 627 were aliens. The separation was made by the indication afforded by the names of patients, experience teaching one to distinguish readily alien names; doubtful cases were classed with natives, so that this allowance and the known tendency of aliens to adopt local names imply that the number of aliens has been rather under-estimated. The classification of the patients stands thus:—

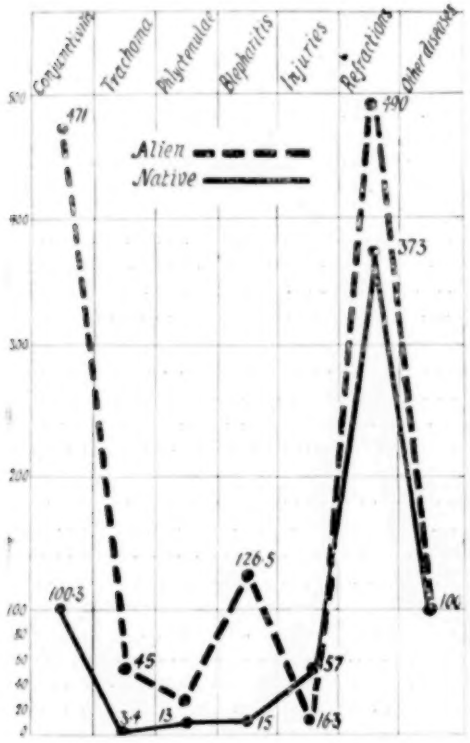
Condition.	Native.	Alien.
Conjunctivitis	321	231
Trachoma	11	22
Phlyctenulæ	42	14
Blepharitis	48	63
Injuries	180	8
Refractions	1202	240
Other diseases of eye (lens, uvea, &c.) ...	320	49

These figures suggest at a glance that aliens suffer more from inflammatory conditions than do natives. The comparison may, however, be made more emphatic by the following procedure. In comparing the incidence of disease in age and sex it was found impossible directly to compare results owing to the disturbing influence of refraction cases which fall particularly heavy at certain periods of life. A "constant" was needed, some disease or group of diseases having a uniform incidence under all conditions of age, sex, or other factor. This "constant" I found in the group marked "Other diseases." The group is a heterogeneous mixture of cases that occur throughout life or in infancy, in youth, or in age alone—lenticular, uveal, fundus, or congenital cases having no connexion with conjunctival conditions—yet despite the mixture in the quality of the cases in the mass they make a fair balance of quantity for each

[1] *Daily News*, Parliamentary Reports, April 26th.

year of life. There is no reason to suspect any racial variation in the incidence of this group of diseases. The same "constant" has therefore been taken for the comparison of the above figures and it will be shown later that the method stands the severest possible test. The results of this comparison are set out graphically in the chart.

The alien suffers from conjunctivitis, trachoma, and blepharitis very much more than does the native, even from five to 12 times more. All these diseases are contagious,



Relative incidence of eye disease in alien and native patients.

some are epidemic, and others endemic. Only in the matter of injuries to the eye by accidents, trivial or serious, is the incidence less in the alien than in the native; this is because the occupation of most aliens is sedentary, whilst the occupations of the native are many and various. Two other features of the chart call for remark: (1) the incidence of phlyctenular conditions; and (2) the incidence of refraction cases.

1. Phlyctenular conditions or eruptions of the conjunctiva or cornea chiefly affect children and are due to nutritional defects more than any other cause. The incidence of this disease in alien and native differs less than any other inflammatory condition. The reason for this lesser liability of the alien to this form of inflammation as compared with other forms is to be sought in their diet. The staple food of the native poor children is tea with bread and butter. The staple food of the alien is richly impregnated with oil. Now the best cure for recurrent phlyctenulæ is cod-liver oil and plenty of it.

2. The incidence of refraction cases shows a marked excess of defective vision in aliens over natives: aliens 490, against natives 373. Now it is possible to check these figures, and in this check lies the test of the truth of the method I have used, comparison by reference to a constant. If the method be correct the figures I have found for the cases at the Royal London Ophthalmic Hospital should show a reasonable agreement with the incidence of defective sight in alien and native school children in London. I applied to Dr. J. Kerr, the medical officer of the late London School Board, for a return and he kindly furnished me with the following.

Comparative Conditions of Visual Acuity of Children attending the Senior Departments of Elementary Public Schools in London (December, 1903).

Group 1.	Group 2.	Group 3.
Jewish children, mostly natives of South Russia and of Poland, and living within a mile of Aldgate.	British children living under very similar conditions as to density of population, &c., as the children in Group 1.	Children of all varieties, local, social, and national conditions—i.e., average for London upon 30,000 children.
Defective 36 per cent.	*Defective 26 per cent.*	*Defective 26 per cent.*

If my figures—aliens 490, natives 373—be both divided by 14 they become, aliens 35, natives 26·7. The School Board figures for similar groups of cases are 36 and 26 respectively. The test is a severe one, and the agreement in the findings obtained by two such diverse methods is the more striking. My figures differ only from those of the Board in being lenient to the alien and severe to the native.

DIRT AND DISEASE.

A cause for the excess of disease is not far to seek; it lies in dirt and overcrowding. Last year I examined 21,893 children, of ages from seven to 14 years, in London Board schools in the Hackney district. The schools were classed in three groups according as the scholars and their surroundings were of average or above or below average cleanliness. The "clean" group of schools was in the north, where good housing and open spaces are found; the "dirty" group was down towards the centre of London, in Hoxton and Bethnal Green. Amongst all schools, clean, average, and dirty, 351 cases of surface inflammations of the eye were noted—an incidence of 1·608 per cent. The incidence was more than twice as heavy in the "dirty" schools as in the "clean" schools, thus:—above average cleanliness, 0·873 per cent.; average cleanliness, 1·416 per cent.; below average cleanliness, 1·921 per cent. Further, a bacteriological examination of the flora of the conjunctiva was made in 100 healthy children (half of each sex, taken in fives in ages of five, seven, nine, 11, and 13 years), 50 in a school of superior cleanliness in North Hackney and 50 in a school below average cleanliness in the Bethnal Green district. The investigations were made last autumn during exceptionally wet weather, so that one common source of conjunctival contamination—dust—was absent. In the "dirty" group of children only three were found to have sterile conjunctivæ; in the other 47 cases 789 colonies were grown, making an average of 17 colonies per subject. In the "clean" group as many as 20 were found to have sterile conjunctivæ; in the remaining 30 cases 262 colonies were grown, an average of 9 per subject. Again, in one school of average cleanliness situated in the better part of Hoxton cultivations were made from the lid margins within the cilia. The head-master chose ten each of his cleanest and of his dirtiest children. All had eyes normal in appearance. All the cultivations were fertile. In the "dirty" group 680 colonies were obtained and in the "clean" group 610 colonies, showing a difference of 10 per cent. in favour of the clean children.

These bacteriological results show that dirt is not far removed from a synonym for disease, in that dirty and ill-kept children are the hosts of more septic organisms than clean children. The examination of native and alien patients shows that superficial inflammations of the eye are much more frequent in the alien than in the native; also that the alien is deficient in visual acuity to a much greater extent than the natives of London generally or of the very poor natives living under conditions similar to those of the poor alien.

The statement of Mr. Bryce that the aliens are "generally healthier than English workers" is not borne out by a reference to eye conditions.

Queen Anne-street, W.

EDUCATION IN "FIRST AID," ETC., FOR WOMEN IN RUSSIA.—According to a note in the *Novoe Vremya* of St. Petersburg the Society for the Promotion of the Professional Education of Women on May 7th opened a third six weeks' course of first aid to the wounded, treatment of the sick, and preparation of food for the sick. At the first and second series 180 women obtained certificates.

THE RELATION OF THE PANCREAS TO DIABETES AND THE QUESTION OF THE TRANSPLANTATION OF THAT GLAND AS A REMEDY FOR THE DISEASE.

BY JAMES W. ALLAN, M.B., C.M. GLASG.,
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THE grave form of diabetes is not only hopeless but the patient is always liable to the sudden development of coma—and death. Therefore, it is not only justifiable but right that any method of treatment which holds out a reasonable hope of success should be tried if, after full explanation, the patient is willing to submit to it.

There is a great mass of evidence, physiological and pathological, pointing to disease of the pancreas (in some cases it may be only functional disorder of the pancreas) as one of the factors, probably the chief factor, in the production of diabetes. The physiology of the pancreas and its relation to diabetes have been carefully and laboriously investigated by a host of skilful and scientific observers, among whom may be mentioned Minkowsky, von Mering, De Dominis, Thiroloix, Hédon, and Lepine. It seems sad if out of all this mass of painstaking experiment and investigation we cannot obtain some therapeutic help for those cases of diabetes not amenable to dieting or to drug treatment and always more or less in danger of diabetic coma. In this connexion the following points may be considered. 1. It is well known that total extirpation of the pancreas induces diabetes. 2. If only a portion of the pancreas is left—even the splenic end—no diabetes occurs. 3. If pancreas is transplanted into an animal before its own pancreas is cut out no diabetes takes place. If the graft is removed diabetes occurs (Minkowsky, referred to by Williamson in Gibson's Medicine). 4. From 2 and 3 it is evident that the prevention of glycosuria is not due to the ordinary secretion of the pancreas, which flows into the duodenum by the duct of Wirsung. 5. It is reasonable to assume that the organ produces an internal sugar-destroying secretion (as contended by Lepine) and that the portion of gland left (2) or the transplanted gland (3) has the power of forming that sugar-destroying secretion or juice. 6. From the foregoing it might therefore be hoped that by transplantation of pancreas a case of diabetes might be cured or relieved. 7. Again, turning to the pathological aspect of the question, we find that disease of the pancreas is frequently associated with diabetes, as is shown post mortem. This is well known and it is, perhaps, unnecessary to cite particular instances. 8. But it must be admitted that there are many cases of diabetes in which no disease of the pancreas is detected. How are we to explain these cases? In the first place, a naked-eye examination may fail to reveal changes in the organ and it may be hastily pronounced "normal" or "healthy." But the real question is, Has the gland been subjected to a careful microscopic examination by a skilled observer and does that examination show the islands of Langerhans to be in a healthy condition? for in those islands the sugar-destroying ferment, the "internal secretion" of Lepine, is produced.

Supposing, however, that in a case of diabetes the pancreas presents healthy normal appearances, both macroscopically and microscopically, are we to conclude that the disease cannot be due to the pancreas in any way? The reply is that there may be a defect in the innervation of the organ, its secretions may be checked by inhibitory nervous action—due to irritation or disease in the nerve centres, say in the floor of the fourth ventricle. I do not possess the profound or intimate knowledge of physiology to enable me to discuss this matter fully and if I did space would forbid. I shall therefore content myself with saying that it is well known that irritation at a certain spot on the floor of the fourth ventricle gives rise to glycosuria. (Osler mentions a curious case which he saw with Reis in Berlin where a woman who had "anomalous cerebral symptoms and diabetes" was found on post-mortem examination to have a cysticercus in the fourth ventricle.[1])

[1] Osler's Medicine.

It is recognised that many cases of *diabetes mellitus* date, it may be immediately, from a mental shock or strong emotion. Is not this analogous to the jaundice which has been known to supervene on strong emotion of disgust. (A case in point has come under my observation.) In this instance it is to be presumed that the nervous influence disorders the function of the liver. In the case of diabetes due to shock may it not be a similar influence affecting the pancreas?

One other point. It may be urged that there are cases of disease of the pancreas with no diabetes. The question here is, Are the islands of Langerhans destroyed or not? If not the sugar-destroying function of the organ may remain.

It seems pretty clear, then, that the revelations of disease support the idea that there is a close association between the pancreas and diabetes. Pathologists tell us that hyperplasia of the intestinal mucous membrane is the most constant post-mortem appearance in diabetes. Granting this to be the case this hypertrophy is very probably *secondary* to pancreatic mischief, as it has been found to follow in cases of glycosuria induced by extirpation of the pancreas. This is important. Hédon says: "Chez les animaux qui ont survécu longtemps, on observe une ectasie parfois considérable de l'estomac et de l'intestin, avec hypertrophie de la tunique muqueuse (et développement anormal des glandes de Lieberkühn d'après Martinotti et Boccardi)." Other pathological changes, also presumably *secondary*, are mentioned by Hédon[2]: "Le tissu du foie peut présenter cependant un état de dégénérescence graisseuse plus ou moins avancé (v. Mering et Minkowski) ..... les reins sont aussi notablement hypertrophiés, ainsi que la vessie. Dans la moelle, Boccardi a rencontré une dégénérescence de la myéline et l'atrophie de certaines cellules nerveuse." These remarks come under the heading: "Extirpation totale du pancreas." Surely the pathological changes in liver, intestine, kidneys, and cord are very significant.

In myxœdema and cretinism benefit has been obtained by implanting thyroid gland. Only two instances need be cited here—Macpherson's[3] and Gibson's.[4] In the former the thyroid of a sheep was transplanted, a half under each mamma. The result was immediate improvement, due no doubt to "the absorption of secretion of the thyroid gland. But I have also reason to believe that a considerable portion of the gland I grafted became ultimately vascularised in the body of the patient." In the latter lamb's thyroid was employed in a child (myxœdematous sporadic cretin). The first grafting was under the sheath of the great pectoral just below the nipple, each lobe being laid open before insertion. In the second grafting one lobe was attached by a silkworm-gut stitch to the anterior left abdominal wall, the other being placed free in the right side of the abdominal cavity. I abstain from further details of these very interesting cases in order to economise space. I have selected these cases because the thyroid of an animal was employed, not human thyroid. Murray, Byrom Bramwell, Kocher, and Fenwick have done work in this field which is known to all the world. Complete extirpation of the thyroid induces myxœdema or cretinism; implantation of thyroid cures or relieves sufferers from myxœdema or cretinism. With these experiences before us, are we not justified in hoping that similar beneficial results may be got by the implantation of pancreas in diabetes? It is to be remembered that the production of the "internal secretion"—the sugar-destroying ferment—is now referred to the islands of Langerhans and *these islands are in structure similar to the thyroid* inasmuch as they are closed ductless glands.

To sum up, physiological experiments, pathological experience, and the results of implanting thyroid in myxœdema all point to transplantation of pancreas in diabetes as a reasonable and justifiable proceeding. It may be urged against the proposal that the diabetic patient is a bad subject for surgical interference. I fear it must be admitted that he is not a desirable subject for operation. At the same time we must not overlook the fact that the myxœdematous patient is pretty much in the same category and that in his case transplantation of gland (although not unattended by some troublesome circumstances) has yielded happy results.

The labours of Murray and others have happily shown us that operation is not necessary for the relief of myxœdema.

[2] Physiologie Normale et Pathologique du Pancréas, p. 151.
[3] Edinburgh Medical Journal, March, 1892.
[4] Brit. Med. Jour., Jan. 14th, 1893.

We know that the internal administration of the gland is attended with equally satisfactory results. But in the case of diabetes the internal administration of pancreas has given disappointment and therefore (in the meantime at least) we are compelled to turn our eyes to operative interference. Dr. P. Watson Williams of Clifton [5] has recorded an attempt to transplant pancreas in diabetes and another attempt was recently made in Glasgow Royal Infirmary.[6] Unfortunately, both of these were unsuccessful. Dr. Williams's case is very interesting and worthy of careful attention. One important fact in connexion with it I may note. The stools were not fatty, but on post-mortem examination the pancreas was found to be atrophied and wasted—a mass of connective tissue with little gland substance left.

This present communication does not aim at urging the operation. My object is to call the attention of my professional brethren to a very interesting and important question in practical therapeutics and to elicit the opinions of those who have more knowledge than myself.

It only remains to be said that if I had a case of diabetes under my care which refused to respond to dietetic or drug treatment and was drifting within range of diabetic coma I should be willing again to assume the responsibility of advising transplantation of pancreas on the following conditions: (1) that after full and honest explanation of *pros* and *cons* the patient requests that the operation shall be performed; (2) that the patient shall not be suffering from acetonuria at the time; and (3) that a sheep shall be killed close to, or in, the place of operation and its pancreas directly conveyed to the body of the patient.

Glasgow.

A CASE OF DERMOID CYST OF THE MESENTERY.

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ALTHOUGH the existence of mesenteric cysts has been recognised for nearly four centuries it is only within the last 20 years that any systematic study of the subject has been made. In English surgical literature, however, very little except the records of isolated cases appeared until six years ago when Moynihan [1] published a valuable contribution in which he gave a comprehensive classification of the various forms of cyst that had been found in this situation. It was largely due to my knowledge of Moynihan's article and to my previous association with one of the cases which he recorded therein that I was able to recognise the condition prior to operation in the case which I now record.

The patient, a girl, aged eight years, was sent to me by Dr. H. Munro of Bradford on March 20th, 1903. Her mother stated that she had first noticed a lump in the child's abdomen four months prior to my seeing her. About three weeks later the patient had diphtheria and went into the fever hospital. The attack was followed by some diphtheritic paralysis. Since returning home the abdominal tumour had increased very considerably in size but had given rise to no symptoms. The patient's condition on examination was as follows. She was a well-grown girl of rather fragile appearance and somewhat thin. There were a distinct nasal intonation and some slight paralysis of the palate still remaining. The knee-jerks were absent and the pulse was quick, varying from 100 to 120 per minute. In other respects the general health appeared to be good. On uncovering the abdomen a prominent tumour was seen on the right of the middle line at the level of the umbilicus. It felt to be of about the size of an English melon and was smooth and globular. In consistence it was highly elastic. It was dull on percussion and there was no tenderness. When the patient lay on her back it sank most readily into the right lumbar region. It could easily be displaced, however, to the left of the middle line and also downwards towards the pelvis, and when displaced it remained in its new position. It was quite free from any liver attachment and the colon did not lie in front of it. Its extreme mobility also negatived the possibility of renal origin. No connexion with the pelvic organs could be demonstrated and, moreover, of all its movements that in a downward direction was the most limited. The urine was normal as were also the intestinal functions. There was no history of any subjective symptoms obtainable. The diagnosis of mesenteric cyst was made, but in view of the post-diphtheritic palsy it was decided to wait for a short period before operating. The patient was kept in bed for three weeks under medical treatment during which time her general condition much improved. The tumour did not perceptibly increase in size during this period.

Operation.—On April 16th ether was administered and the abdomen was opened through the sheath of the right rectus muscle. A cystic tumour was found lying in the mesentery of the ileum. The cyst wall was thick and pearly-white in colour and very scantily supplied with blood vessels. At this stage the pulse became alarmingly rapid and it was evident that the patient would not endure any prolonged operation. The edges of the incision were therefore attached to the cyst with a few sutures and the wound was packed with gauze. For the next two days the child was very ill, with a very rapid pulse and symptoms of shock. She then improved and soon seemed none the worse. This alarming collapse could only be attributed to the post-diphtheritic state and it was decided simply to incise the cyst and to drain it as soon as adhesions had formed. On April 23rd, therefore, ether was again given and the dressings were removed. It was then found that no adhesions had formed between the cyst and the abdominal wall and as the patient bore the anæsthetic well it was decided to attempt removal. The abdominal cavity was packed off with gauze and the cyst was incised. A pint of thick creamy fluid escaped. The cyst wall was easily peeled from the mesentery with the exception of a couple of square inches which were closely incorporated and could not be removed without endangering the blood-supply of the gut. The whole cyst wall, therefore, was cut away excepting this small area which was fixed to the edges of the peritoneum in the lower parts of the wound. This portion of the incision was left open and packed with gauze whilst the upper half was closed with sutures. The patient bore the operation well. The portion of the wound which was packed healed by granulation in eight weeks and left a firm scar. The child has continued in excellent health since the operation.

The disposition of the tumour and the viscera when the abdomen was opened was as follows. The cyst, which was as large as a cocoanut, lay in the mesentery of the ileum. It occupied the whole breadth of it except for an inch on either side at the fixed and free borders. The narrow strip of mesentery between the gut and the cyst was abnormally thick and fleshy. So far as it was possible to estimate by a rapid survey its site was about 25 inches above the ileo-cæcal valve. There was no ascending colon; the cæcum and appendix were lying in the epigastrium above and to the left of the tumour. The ileum therefore almost completely encircled the cyst, passing first along its lower border, then up the right side, and finally above it from left to right to reach the cæcum in the epigastrium. In front of the cyst the anterior or upper layer of the mesentery had practically disappeared from atrophy so that only the posterior aspect of the tumour had any mesenteric attachment. The cyst contained a pint of thick creamy material of treacly consistence. There were a very few fine hairs in it and some pasty masses which appeared to be conglomerations of flattened epithelium. There were large quantities of oil globules which blackened when treated with osmic acid. The interior of the cyst wall was granular and roughened as if inflammatory changes had occurred in it. There were also considerable patches of ecchymosis in the wall. Sections under the microscope failed to demonstrate any epithelial lining, the latter having apparently been entirely destroyed. There seems no doubt, therefore, that the tumour was a dermoid cyst of the mesentery in which degenerative changes had occurred.

The case appears to me to possess an interest over and above those hitherto recorded from the fact that the conditions found at the operation seem to have some bearing on the etiology of the growth. The situation of the cyst was that in which the remains of the vitelline duct are not uncommonly found and the large intestine was imperfectly developed. The cæcum occupied the position which is attained about the third month of fœtal life. Whilst the

[5] Ibid., vol. ii., 1894, p. 1303.
[6] Ibid., Feb. 28th and March 21st and 28th, 1903.
[1] Annals of Surgery, July, 1897.

first may be purely a coincidence the two circumstances in association lend colour to the view that the cyst owed its origin to a defect in the alimentary canal and that such defect occurred about the third month of fœtal existence. The condition of the ovaries could not be definitely ascertained at the operation without enlarging the incision, a procedure which was not deemed justifiable. The right ovary could just be reached with the finger tips and appeared to be normal.

Of the clinical features the most striking were the extreme mobility of the tumour, its marked globular shape, and its central position. Excepting when it rolled back into the loin the most prominent point of the tumour lay immediately on the right of the umbilicus.

The only complication in the treatment was the alarming collapse on the first occasion of opening the abdomen. The child had not been under ether more than five minutes, just long enough, in fact, to open the abdomen and to ascertain the site and attachments of the tumour. On the second occasion the cyst was incised and emptied *in situ* and then drawn out of the abdomen. It is possible, therefore, that on the first occasion the handling of the large tense cyst may have caused some pressure on the solar plexus and so produced the collapse.

Bradford.

NEURO-RETINITIS IN CHLOROSIS.[1]

BY J. JAMESON EVANS, M.D. BIRM., F.R.C.S. ENG.,
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Hirschberg in 1879 was the first to note the occurrence of optic neuritis due to chlorosis. Since then cases have been recorded by Gowers, Herschel, Richard Williams, and others. In 1882 Saundby and Eales investigated the state of the fundus oculi in 50 cases of chlorosis. They found some abnormal appearance of the fundus in 32 per cent. of the cases and some degree of neuro-retinitis in 8 per cent. This striking result would have convinced most people of the comparative frequency of retinal changes in chlorosis, and yet such a reliable ophthalmoscopist as Max Knies says "hæmorrhages into the fundus never occur in chlorosis" and "in view of the rarity of these cases (neuritis and neuro-retinitis) and the frequency of chlorosis this association may be a mere coincidence." I question if many ophthalmologists will be found to agree with these statements. So far as I am concerned I am fully convinced that the condition is far from being rare and clearly stands to chlorosis in the relation of effect and cause.

The pathological changes which have been observed in the fundus in cases of chlorosis include arterial pulsation, pallor of the fundus, disc and vessels, broadening of the veins, and dulling of the light streak. The arteries may be comparatively and absolutely narrower than normal, though their light streak is broader than usual. These changes are of little or no diagnostic or prognostic significance. Of much more serious import are optic neuritis, neuro-retinitis, and retinal hæmorrhages. The neuritis naturally varies in degree but it is often intense and of the "choked-disc" type. The neuritis may or may not be associated with retinitis or retinal hæmorrhages. The hæmorrhages are generally striate, though some cases show a sprinkling of the punctate form. White degenerative patches are often present and may form star- or fan-shaped figures in the macular region. The appearances generally simulate those seen in intracranial disease but they may be very suggestive of albuminuric retinitis in some cases. It is well in all cases of this sort to examine the urine and carefully to consider the possibility of intracranial mischief, notably syphilitic new growths. Hæmorrhages more or less extensive may occur without neuritis.

Max Knies has described degenerative changes around the yellow spot simulating those of albuminuria but without any neuritis or retinitis and with little or no impairment of vision. They were always unilateral and disappeared completely in about six months. The degree to which vision is affected by these changes is very variable. In some of the more acute cases vision is only slightly below normal during the early stages. This is unfortunate, as much valuable time may be lost owing to lack of symptoms suggestive of profound pathological fundus changes. In the later stages, when atrophy of the optic nerve has set in, the sight is seriously and permanently impaired. Large hæmorrhages in the macular region are followed by marked impairment of vision owing to destruction of the retinal elements by the extravasation. If diagnosed early and vigorously treated much improvement of vision and even recovery of normal vision may be looked for (*vide* cases).

The fields of vision are generally slightly contracted owing to atrophy of some of the nerve fibres. The atrophy is not progressive and the amount of contraction is governed by the extent to which the nerve fibres have been destroyed during the inflammatory period. The contraction is generally more or less concentric. Extensive patches of retinitis or hæmorrhage may give rise to scotomata, but these are seldom complained of by the patient.

The condition of the blood in cases of chlorosis presenting retinal changes requires further investigation. The records so far are not complete enough. Gowers is inclined to think that in the cases which show marked optic neuritis the hæmoglobin is reduced out of all proportion to the corpuscles and that hæmorrhages only take place where there is an absolute deficiency in the number of red corpuscles. This assumption is scarcely warranted on the strength of the limited number of cases published, but it seems supported by the fact that in pernicious anæmia (corpuscular defect) hæmorrhages are much more common than neuritis. Stephen Mackenzie, from observations made on a good number of cases, has come to the conclusion that a reduction of 50 per cent. in the number of corpuscles indicates a tendency to retinal hæmorrhages. He makes no reference to the state of the blood in cases of simple neuritis without hæmorrhages. I have not been impressed by any distinct relationship between the blood condition and the character of the retinal changes. Some slight irregularity of shape of the red corpuscles and imperfect rouleau formation have been observed. The leucocytes did not show any abnormality and their number varied from 4000 to 8000 per cubic millimetre in my cases.

It is of great importance that the neuro-retinitis of chlorosis should be diagnosed early, otherwise atrophy of the nerve will inevitably develop and the sight will be permanently damaged. To avoid such a calamity all cases of profound or even marked anæmia should be examined ophthalmoscopically and the treatment should be conducted with due reference to the state of the retina and optic nerve. It is important not to mistake the neuro-retinitis of anæmia for that due to syphilis or intracranial growths as it involves the possibility of harmful treatment (with iodide of potassium, &c.) as well as destructive delay. A rapidly developed neuro-retinitis, especially if it assumes an acute form, occurring in a patient whose hæmoglobin or red blood corpuscles are reduced to 50 per cent. or less and who shows no signs of a cerebral lesion may with a considerable degree of certainty be put down as anæmic in origin.

No satisfactory theory as to the cause of the neuritis and hæmorrhages occurring in chlorosis has been propounded. Gowers holds that the hypermetropia which is frequently present in these cases causes a (natural) slight congestion of the nerve, which in the anæmic state of the blood becomes intensified into a neuritis. Hawthorne has suggested that thrombosis of the cavernous sinus is the primary cause of the neuro-retinitis. I am inclined to think that degenerative change, probably fatty, in the vessel wall associated with the change in the composition and intravascular pressure of the blood are the most likely factors in its production. A discrepancy between the intravascular and intra-ocular pressures might easily lead to serous effusion and rupture of blood vessels weakened by disease.

The prognosis with regard to recovery of sight is good if the case be diagnosed early and treated energetically. This is true even of the cases showing pronounced neuritis of the choked-disc type. Those cases which fully recover their vision also recover with little or no contraction of the visual fields. If for any reason the inflammatory changes are allowed to take their own course—e.g., through incomplete or mistaken diagnosis or carelessness on the part of the patient in seeking advice—then atrophy of the optic nerve accompanied by diminished vision and contracted visual fields will inevitably set in. Hæmorrhages if extensive and central are liable to be followed by a much diminished visual acuity, but even here the prognosis is not so unfavourable as

[1] Extracted from a paper read before the Midland Medical Society in March, 1903.

might be expected, judging by the ophthalmoscopic appearances during the early stages.

The treatment is the ordinary routine for chlorosis—viz., iron, with or without arsenic. Due attention should be given to disturbances of the intestinal tract. The iron should be pushed to the utmost as it is essential that the action should be prompt so as to avoid the extension of the inflammatory changes and the development of optic atrophy. The eyes should be shaded either with smoked glasses or a bandage. It is not necessary or even advisable to darken the room. The patient should be kept in bed. Absolute rest of body and eyes is essential in these cases as the neuro-retinitis indicates a degeneration of the vascular system.

The following cases are illustrative of the more pronounced fundus changes seen in chlorosis. The blood examinations are not as complete as one could wish, but they are sufficiently so to indicate the degrees of anæmia which may give rise to ocular lesions. They also give a good idea of the course and progress of such cases and the ultimate results of treatment.

CASE 1.—The patient was a girl, aged 17 years, who was admitted to hospital on Dec. 15th, 1898. She had been suffering from frontal headaches for a month. She had vomited three times during the month. Menstruation was regular. She had not noticed anything wrong with her sight. On ophthalmoscopic examination it was found that she had optic neuritis in each eye. The discs were very swollen, enlarged, and "woolly," and showed some glistening deposits. There were no hæmorrhages. The vision was R.V. = $\frac{6}{12}$ c. + 5 D.; L.V. = $\frac{6}{9}$ c. $\frac{+ 5 \text{ D. sph.}}{+ 2{\cdot}5 \text{ D. cyl. } \varphi_{90}}$. The fields were contracted slightly (about 10°) on the temporal side. Blood examination gave the following result: hæmoglobin, 35 per cent.; red corpuscles, 3,640,000 per cubic millimetre; and white corpuscles, 7500 per cubic millimetre. The colour index was 0·43. The heart and urine were normal. The treatment consisted of pil. Blaud iii. three times a day and a mixture containing iron and arsenic as well. Cascara sagrada in tabloid form was given every night. On Dec. 20th a blood examination gave the following result: hæmoglobin, 45 per cent.; red corpuscles, 3,780,000 per cubic millimetre; and white corpuscles, 7500 per cubic millimetre. Treatment was as above and burgundy, raw beef, and sandwiches were included in the diet. On the 31st the swelling of the discs was less marked. R.V. = $\frac{6}{9}$ c. + 4 50 D. sph.; L.V. = $\frac{6}{9}$ c. $\frac{+ 4{\cdot}5 \text{ D. sph.}}{+ 2{\cdot}5 \text{ D. cyl. } \varphi_{90}}$. The following is the result of the blood examination: hæmoglobin, 58 per cent.; red corpuscles, 3,980,000 per cubic millimetre; and white corpuscles, 7000 per cubic millimetre. On Jan. 5th, 1899, there was still marked swelling of the discs—viz., the right summit was seen best with + 8 D. and the left ditto with + 7 D. The vision was the same as on Dec. 31st. On Jan. 10th the blood was again examined with the following result: hæmoglobin, 70 per cent.; red blood corpuscles, 4,240,000 per cubic millimetre; and white blood corpuscles, 6500 per cubic millimetre. The patient was discharged on this day.

CASE 2.—The patient was a girl, aged 18 years, who was admitted to hospital on April 11th, 1899. Her sight had been failing slightly since January of the same year. A month before admission it became so bad that she had to give up her work and was treated for anæmia by her own medical adviser. During the two weeks preceding the date of admission her sight had still further deteriorated; she had also suffered from frontal headaches and she had vomited two or three times. There was no evidence of her having had hæmatemesis. On admission the pupils were widely dilated and did not react to light. The optic discs were swollen (+ 4 D.) and pale and showed numerous fine hæmorrhages. The veins were tortuous and obscured in places near the discs by exudation. The maculæ had a faint striated appearance. R.V. = perception of hand movements; projection was good. L.V. = no perception of light. The following is the result of the examination of the blood: hæmoglobin, 60 per cent.; red blood corpuscles, 3,960,000 per cubic millimetre; and white blood corpuscles, 6250 per cubic millimetre. The colour index was 0·68. There was a trace of albumin in the urine; the specific gravity of the latter was 1015. All other systems were normal. Treatment consisted of Blaud pill with arsenic and nux vomica and potassium iodide in mixture and some mistura alba every morning. The diet included fish, beef-tea, raw meat, and claret. On April 18th no headache was present. The right pupil reacted slightly to light. R.V. = perception of hand movements; L.V. = no perception of light. On the 23rd blood examination gave the following result: hæmoglobin, 70 per cent.; red blood corpuscles, 4,320 000 per cubic millimetre; and white blood corpuscles, 6250 per cubic millimetre. On May 1st the swelling of the discs was less (+ 2·5 D.). The pallor of the discs was more pronounced. There were a few small hæmorrhages still on the discs. The veins were of about normal size but the arteries were contracted. On the 8th the blood was again examined with the following result: hæmoglobin, 76 per cent.; red blood corpuscles, 4,600,000 per cubic millimetre; and white blood corpuscles, 8750 per cubic millimetre. There were no further change in the appearance of the fundus and no improvement of vision and the patient was discharged on May 19th. It is evident from the history that this patient had been suffering from optic neuritis for three or four months before admission. There was evident atrophy of the nerve on admission and this became more marked during her stay in hospital. No further improvement was to be expected and she was consequently discharged. The favourable condition of the blood was no doubt due to the treatment received before admission.

CASE 3.—The patient was a girl, aged 17 years, who was admitted to hospital on Jan. 14th, 1899. Her present illness began about five weeks before admission with frontal headaches, giddiness, and sickness, and some vomiting after food. There was no indication of hæmatemesis. Sight had been failing for two weeks before admission. Amenorrhœa had persisted for two months. On admission the patient showed marked pallor of her mucous membranes. The pupils were dilated (ten millimetres) though they reacted well to light and accommodation. The media were clear. The optic discs were much swollen (+ 4 D.) and their centres were filled in with whitish exudation. The veins were distended and tortuous. There were numerous fine striate and punctiform hæmorrhages in the region of the discs and maculæ. White degenerative spots were also to be seen in the yellow spot region in each eye. R.V. = $\frac{6}{9}$ c. + 2 D.; L.V. = counting fingers at two feet. The colour vision was impaired. On examination of the blood the following result was obtained: hæmoglobin, 38 per cent.; red blood corpuscles, 2,840,000 per cubic millimetre; and white blood corpuscles, 10,000 per cubic millimetre. The colour index was 0·60. The other systems were normal except for a systolic murmur heard over the apex and the base of the heart and conducted into the axilla. The treatment was the same as that in Case 1. On Jan. 19th a blood examination was made with the following result: hæmoglobin, 43 per cent.; red blood corpuscles, 3,420,000 per cubic millimetre; and white blood corpuscles, 9500 per cubic millimetre. R.V. = $\frac{6}{9}$ c. + 1·5 D.; L.V. = counting fingers at four feet. On the 30th the discs were slightly less swollen and paler. R.V. = $\frac{6}{9}$ c. + 2 D.; L.V. = $\frac{6}{24}$ c. + 2 D. A blood examination gave the following result: hæmoglobin, 58 per cent.; red blood corpuscles, 3,800,000 per cubic millimetre; and white blood corpuscles, 8750 per cubic millimetre. On Feb. 6th R.V. = $\frac{6}{12}$ c. + 2 D.; L.V. = $\frac{6}{12}$ c. + 2 D. The discs were paler. On the 13th the blood was examined with the following result: hæmoglobin, 70 per cent.; red blood corpuscles, 4,660,000 per cubic millimetre; and white blood corpuscles, 7812 per cubic millimetre. On the 28th the result of the blood examination was: hæmoglobin, 76 per cent.; red blood corpuscles, 4,500,000 per cubic millimetre; and white blood corpuscles, 6875 per cubic millimetre. R.V. = $\frac{6}{9}$; L.V. = $\frac{6}{9}$. The discs were very pale, with indistinct edges; the blood-vessels (especially the arteries) were contracted. There was slight swelling of the discs. On March 12th the blood was examined with the following result: hæmoglobin, 75 per cent.; red blood corpuscles, 4,360,000 per cubic millimetre; and white blood corpuscles, 5000 per cubic millimetre. The vision was the same as on Feb. 28th. The patient was discharged on March 13th.

CASE 4.—The patient was a female, aged 24 years, who was admitted to hospital on June 20th, 1899. Six weeks before admission she had had a severe attack of hæmatemesis. This had no noticeable effect on her sight but a less severe attack just before admission made her feel so "giddy and dazzled" that she had to be led to bed. On admission she was pale and waxen in appearance. The conjunctivæ were markedly pale and there was a slight whitish, sticky discharge which glued the lids together a little in the mornings. The corneæ lacked brilliancy. The

media were clear; the right pupil was active and the left was sluggish. There was occasional divergent strabismus. The right optic disc was swollen and the edges were blurred by effusion which here and there obscured the vessels. The veins were full and tortuous; the arteries were smaller than normal and difficult to see. The retina in the region of the disc and yellow spot was œdematous. A few small striate hæmorrhages were visible along the course of the vessels near the disc. In the macular region were about four well-marked soft grey patches showing hæmorrhagic borders. In between the patches were a few small punctate hæmorrhages. The left optic disc was not so swollen and the edges were better defined. There was less œdema of the retina and the veins were less full and tortuous, while the arteries were more visible and larger. The hæmorrhages were fewer and the grey patches at the macula were fewer (two). Blood examination gave the following result: hæmoglobin, 10 per cent.; red blood corpuscles, 1,012,500 per cubic millimetre; and white blood corpuscles, 8200 per cubic millimetre. The colour index was 0·44. The blood was examined on July 5th, the result being as follows: hæmoglobin, 10 per cent.; and red blood corpuscles, 1,392,000 per cubic millimetre. Stained films showed great variety in the size of the red cells, some very large, some very small, some evidently degenerating, many poikilocytes, a very few nucleated red cells, some normoblasts (one with a nucleus showing mitosis), and one or two megaloblasts. There was an apparent increase in blood plates. There was no apparent increase in the leucocytes. Some increase in transitional forms was noted as well as some atypical myelocytes. On August 4th the blood was again examined with the following result: hæmoglobin, 54 per cent.; red blood corpuscles, 3,000,000 per cubic millimetre; and white blood corpuscles, 7080 per cubic millimetre. Stained films showed a few poikilocytes and microcytes but no nucleated red cells. The red cells were of fairly uniform size and stained evenly. No abnormal leucocytes were observed. The patient was discharged on August 6th. She unfortunately left the hospital without having her vision tested but the deterioration was evidently not such as to cause her any inconvenience.

CASE 5.—The patient, a girl, aged 19 years, was admitted to hospital on Jan. 4th, 1899. The general health had been indifferent for two months. The sight had been failing for a month; several times a day it would get "misty" for a second or two and then clear up again. On admission the mucous membranes and skin were very pale. The patient had suffered from breathlessness and constipation. There was a basal murmur. The pupils were normal.

Right fundus of Case 5.

Marked papillitis was present with a few striate hæmorrhages near the edges of the swollen and ill-defined discs. The swelling of the discs = + 6 D. There was a fan shaped arrangement of white degenerative lines and spots extending between the yellow spots and discs. The foveæ were occupied by a dark brown network situated superficially to the white lines. R.V. = $\frac{6}{12}$ c. + 4·5 D.; L.V. = $\frac{6}{12}$ c. + 5 D. The treatment was the same as that carried out in Case 1. On Jan. 10th the blood was examined, the result being as follows: hæmoglobin, 50 per cent.; and red blood corpuscles, 3,400,000 per cubic millimetre. The colour index was 0·7. On the 31st R.V. = $\frac{6}{6}$ c. $\frac{+ 4·5}{+ 0·50\ \phi_{90}}$; L.V. = $\frac{6}{12}$ c. + 6·5 D. The fundi were *in statu quo* (*vide* illustration). On Feb. 16th R.V. = $\frac{6}{6}$ c. $\frac{+ 5\text{ D.}}{+ 0·50\ \phi_{90}}$; L.V. = $\frac{6}{6}$ c. + 6 D. There were much less swelling of the discs and very little effusion into the retinæ. The degenerative changes near the yellow spot were *in statu quo*. The patient was discharged on May 4th.

Birmingham.

FASTING IN THERAPEUTICS.

BY JOHN HADDON, M.A., M.D. EDIN.

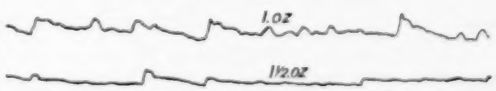
HAVING had occasion to study diet my attention has been directed to fasting as a therapeutic agent and the following case seems worthy of record.

The patient was a man, aged 65 years, who had been a hard drinker and a good eater all his life, working on contracts. He was much crushed and nearly drowned by scaffolding falling upon him. His life was for some time despaired of but he recovered. When I saw him seven years after the accident he weighed 18 stones, was crippled on one foot, and walked with a stick very slowly. He could not sleep in the night from coughing and spitting, passed urine every hour, and could hardly turn in bed from a stabbing pain in the side. He could not dress himself and was altogether in a pitiable condition. Having seen him I promised him that if he would follow my advice he would renew his youth. He was a man of powerful will and he said that he would do anything to get well.

I put him upon a little fruit twice daily. In five days he lost ten pounds in weight and he could dress himself and lace his boots which he had not done for years. As he lost weight his vigour increased and he began to work in his garden and to take long walks. All his troublesome symptoms left him and he could sleep like a child from 9 P.M. to 4 A.M. without waking. He had to get new clothes to suit his reduced size and in November (he began in June to restrict his diet) declared that he felt as well as ever he did and were it not for the damage he had received in the accident he might resume work as before. On Nov. 10th I saw him wheeling up a hill a barrowful of potatoes which he had himself dug out in the field.

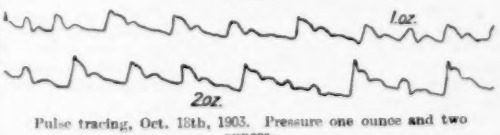
The change in his pulse was remarkable (Figs. 1 and 2). I never felt or saw a pulse so irregular and intermittent in character at first but it gradually improved and became fairly regular which the sphygmographic tracings show very clearly.

FIG. 1.



Pulse tracing, June 16th, 1903. Pressure one ounce and one and a-half ounces.

FIG. 2.



Pulse tracing, Oct. 13th, 1903. Pressure one ounce and two ounces.

He said he was neither hungry nor thirsty on the fruit diet. He now eats only about a quarter of what he did formerly and when the weather prevents him working or walking he at once gains weight.

This case seems deserving of attention from the marvellous change produced by abstinence and may encourage us to try a partial or perfect fast in suitable cases.

Denholm, N.B.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TAPEWORM AS A CAUSE OF CHOREA.

BY H. TENER GALBRAITH, F.R.C.S. EDIN.,
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UNDER the heading of "Clinical Notes" some remarks were published in THE LANCET of Sept. 19th, 1903, p. 824, on the relation of tapeworm as a causative factor in chorea. The following case of the same kind is of interest.

A boy, aged ten years, said to be suffering from tapeworm, was brought to me by his father on August 6th, 1903. Male fern had been administered some time previously and had caused a partial expulsion of the worm, but the effect of the drug was so drastic that a repetition of the treatment was not considered desirable. The patient had just returned from the coast where he had been taken a month previously when convalescent from measles. He looked thin and pale and had derived no benefit from the change, indeed, according to his father's statement, he was actually worse and had recently appeared tired and breathless after slight exertion. Examination of the chest disclosed a well-marked mitral murmur the existence of which was unknown to the father. I prescribed syrup of iodide of iron and phosphate of iron; kousso was also given for the purpose of expelling the worm. On August 22nd the boy was again brought to me and this time for chorea which had developed in the interval since his last visit. The movements were bilateral and especially marked on the right side. The kousso had been unsuccessful and had been vomited. The coincidence of the presence of the worm and the onset of the chorea led me to the conclusion that possibly the irritation of the former had a distinct influence on the nervous system and more particularly in the patient's weak and anæmic condition. Bromides and arsenic were ordered and fluid extract of pomegranate bark was selected to deal with the parasite. Again only some segments of the worm were passed, so I decided to wait for a month before making a fresh attempt. On Sept. 10th the extract of pomegranate bark was again administered and this time the dose was increased to eight fluid drachms but without material success. No improvement had taken place in the chorea or general condition. By mutual agreement with the patient's father it was decided that the worm must be brought away, so operations were commenced by ordering that the boy should be fed extensively with onions. After a week of this treatment 12 drachms of fluid extract of pomegranate bark were given and some hours afterwards several feet of worm were brought to me by the boy's father. Next morning the dose was repeated and the same afternoon the remainder of the worm, including the head, was produced for my inspection. After this the chorea rapidly diminished and in another month was barely perceptible. Due precautions as to starvation and the administration of purgatives were observed each time that a vermifuge was administered.

The chief point of interest in this case centres in the coincidence of chorea supervening in the presence of the intestinal parasite and the prior recognition of the heart murmur which may be fairly ascribed to the attack of measles from which the patient had suffered some time previously. Although endocarditis is uncommon in simple epidemic measles there can be little doubt that it occurred in this instance without being recognised by the medical attendant. No history of rheumatism or of any disease other than the recent attack of measles could be elicited to account for the heart murmur.

The relation of intestinal parasites as an exciting cause in the etiology of chorea in not mentioned by any of the authorities whose works are available to me for reference, not even in Dr. L. Starr's extensive treatise on the diseases of children—a book in which such reference might be expected. It is not suggested that the presence of intestinal parasites acts in any other manner than by maintaining a continued peripheral irritation of the intestinal mucosa which acts on the motor centres and sooner or later produces functional excitement. The presence of anæmia, malnutrition, febrile disease, or any weakening influence would be predisposing causes in such circumstances. While the etiology of chorea is still an unsettled point the preponderance of opinion seems to point to a neurosis or peripheral irritation as the cause, while the endocardial lesions are explained as due to a secondary infection. Dr. Starr in an analysis of 1400 cases finds that heredity and infectious disease bear no definite relation in the etiology of chorea, the most constant element being malnutrition. Gerhardt comes to similar conclusions, most other statistics show that a considerable proportion of cases belong to families of a neurotic type, and all sources agree on the great preponderance of incidence in the female sex. This preponderance of chorea in females may be regarded as in favour of a neurotic origin of the disease and the more so when their predisposition to anæmia and various neuroses must be admitted. Anæmia appears to be present in more or less degree in all cases and probably precedes the chorea. The occurrence of chorea in pregnancy is difficult to explain otherwise than from emotional causes or peripheral irritation through foetal movements. During the Anglo-Boer war three such cases occurred in my practice in Boer women whose husbands were on commando and all at the one period—namely, after the relief of Ladysmith, when the Boer forces were in a panic and *sauve qui peut* was the predominant idea. In these three cases, though the cause was due to fright and the hysterical form of chorea to be expected with more or less rhythmical movements, the movements were distinctly spasmodic, irregular, and increased by voluntary efforts.

During 1903 four cases of chorea occurred in my practice, including the one I have detailed. The remaining three were females, aged seven, ten, and 15 years respectively; in none was there any history of rheumatism and all were anæmic. In the female cases one only could be associated with an apparent cause—namely, a secondary amenorrhœa in the girl aged 15 years. Treatment directed entirely to this was followed by a disappearance of the chorea in the month following the return of the menses. There was a distinct increase of chorea in this district during the year 1903 and as a coincidence an epidemic of acute anterior poliomyelitis of a mild type, six cases arising in my own practice. So remarkably prevalent was this epidemic that I had an inquiry from the health officer of the Colony on the subject, as the outbreak had been brought to his notice from other districts in the Colony.

Dundee, Natal.

A CASE OF TAPEWORM IN A CHILD.

BY J. A. RIGBY, M.D. LOND.

THE patient was a pale, delicate-looking girl, aged two years and ten months, and was brought to see me with the following symptoms and history. She had a variable appetite and was uncertain and irritable in her temper, was restless at night, and did not thrive as she ought to do. Her mother informed me that she was in the habit of eating raw meat and she had been encouraged to do this under the impression that it would tend to increase her strength. I suggested that she might be suffering from tapeworm and directed the mother to inspect carefully the stools so as to discover if she were. On my next visit the mother showed me a motion which contained distinct evidence that the child was suffering from tapeworm, as there were several links of two or three proglottides each in it. A careful watch was kept up and it was found that she was constantly passing segments of the worm.

Tapeworm in young children is not unknown but it is comparatively very rare. In the course of a fairly extensive practice extending over 30 years this is only the second case I have met with. The treatment of tapeworm in adults presents no difficulty but in the case of children it is somewhat different, as the dose of the remedy sufficient to kill the worm might possibly have a very deleterious effect on the child. On looking up the subject I found that most authorities when describing the treatment of cases suffering from tapeworm make no discrimination as to the treatment of cases occurring in children. It would, I think, be conceded that to administer a dose of from 30 to 120 minims of the liquid extract of male fern on an empty stomach to a child under three years of age would scarcely

be an advisable proceeding. Dr. I. Burney Yeo says:[1] "Pumpkin seeds have been found a mild and useful tæniacide for children and not unpleasant to take ..... About one ounce of the seeds may be given a child for a dose and they may be pounded up with sugar and honey into a paste which children will readily eat." This remedy was prepared as directed and given to the child on two separate occasions at about a fortnight's interval with absolutely no results whatever, the segments being constantly thrown off in the stools exactly the same as before.

The reason for this paper being written is because of the simple and efficacious treatment that was then adopted and which, while proving quite effective, had no injurious effect on the child. Two teaspoonfuls of castor oil were administered at night and the following morning this mixture was given. A drachm of kousso was infused for 30 minutes in three ounces of boiling water. To this three drachms of the liquid extract of liquorice were added. One-third part of this mixture, which was not strained but was well shaken up, was administered every two hours. The child took it without any difficulty and the result was most satisfactory, as in a few hours a worm of great length was expelled, and although the head was not found the segments became so very fine that it was quite certain the head must have been detached at the same time, though not discovered. There have been no signs of any return since, although now three months have elapsed.

Preston.

NOTE ON THE ACTION OF CROTON OIL AND OF PILOCARPINE

BY WILLIAM ROPER, L.R.C.P., L.R.C.S. EDIN.

A BRIEF *résumé* of some of the effects observed during a frequent use of croton oil in minute doses will probably present some features of interest. In the first case which I will select as an illustration the patient was a black man in South Africa who some years ago, after a heavy meal, had a great lump or bolus in his stomach. He was purged by calomel without relief. No vomiting of the bolus or any improvement was obtained with zinc sulphate and with apomorphine given hypodermically. Two minims of croton oil were then given, a small dose for a black man who is tolerant of more than four times the purging necessary for a white man. The effect of this was vomiting without purging and with reduction of the bolus, the effect of four minims subsequently given being both vomiting and purging. The man made a good recovery.

In the following cases all the patients were white men. My first cases of seasickness and of diarrhœa treated with this drug seem worth recording.

A man suffering from seasickness made a good recovery with no unpleasant after-effects as a result of taking castor oil containing one-fifth of a minim of croton oil to the teaspoonful.

Another man had diarrhœa for two or three days with five evacuations in the last two and a half hours. I gave him half a teaspoonful of crotonised castor oil containing one-tenth of a minim of croton oil. He repeated the dose in an hour and four hours later he reported that there had been no further evacuations but that he experienced a sensation of something bearing down lower and lower in his bowels. Four hours later he reported one evacuation and then a normal condition prevailed. This slow action of croton oil seemed to show that there was a morbid irritant needing expulsion.

A man under my treatment once took in a fortnight about 50 full doses of calomel followed by Epsom salts and then after this he reported that he felt under croton oil a sensation of "scraping" and that he passed black fæces—a colour unlike that of the fæces previously passed. A strange contrast exists between the action of full and minute doses of croton oil. In both a sensation of movement quickly follows administration, the interval between a sensation of movement and evacuations being in full doses sometimes only a few minutes and in minute doses sometimes a whole day and frequently half a day. Many after taking suitable doses of croton oil think its action most pleasant, increasing the appetite, a point worth noting, also supporting the opinion that it only causes pain when something such as an impacted mass requires to be moved. In these cases when a first dose is painful a second is frequently pleasant and stimulating.

The addition of croton oil to a bottleful of castor oil facilitates accurate dosage of the former and economises the latter. The above instances seem to show that croton oil when given in suitable doses cleans the whole intestinal canal without causing so much irritation as some other purgatives. This cleansing of the bowels of what may be left behind by other agents—purgatives and emetics—seems to indicate an extended field for the employment of a drug little used by the profession except as a last resort in obstinate constipation.

While writing on this subject I may be permitted to refer to my inquiry published in THE LANCET of August 1st, 1903, p. 342, regarding any dangers attending the treatment of pneumonia by pilocarpine. It elicited in THE LANCET of August 8th an account of one death under this treatment, the patient being a man in an early stage of the disease who suddenly developed dyspnœa followed rapidly by collapse and heart failure unchecked by atropin and cardiac stimulants. A case under my care might perhaps throw some light on the cause of this. A commanding officer of a military post in South Africa suffering from a common catarrh took one night one-third of a grain of pilocarpine with benefit and the next morning he took one quarter of this dose—i.e., one-twelfth of a grain—and proceeded to his duties about the camp. Although the dose was so small he was soon in a condition of dyspnœa which compelled him to lie down for the rest of the morning but he was well again in the afternoon. This result following on one-twelfth of a grain when he had taken with benefit four times as much as on the previous night (I was careful to make a correct entry of the doses) seems to show the danger of any impediment of any kind, even mental or social besides physical, to vigorous expectoration after taking pilocarpine even in small doses. In the case of this gentleman engaged in his duties about the camp reasons certainly not physical but mental or social prevented vigorous expectoration; at least, I can think of no other cause for the result.

Collie, West Australia.

[1] Medical Treatment, vol. i., p. 272.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

SALOP INFIRMARY, SHREWSBURY

A FATAL CASE OF RAYNAUD'S DISEASE.

(Under the care of Dr. EDWARD CURETON.)

FOR the notes of the case we are indebted to Dr. E. W. Strange, late house physician.

The patient, a man, aged 35 years, was admitted into the Salop infirmary on Feb. 1st, 1904, with the following history. He was a striker at an iron foundry and thus was often exposed to great changes of temperature. As long as he could remember he had been subject to attacks of numbness in his fingers which were much more frequent in cold weather and came on if he put his hands into cold water or went out suddenly into the cold air. He said also that his mother and brothers were subject to similar attacks. His description of an attack was as follows. His fingers became suddenly cold as far as the proximal interphalangeal joints and he had a feeling of numbness with this and for a time the fingers were useless. Frequently both hands were affected but sometimes only one or two fingers on one hand. At first his fingers were white and the duration of this stage varied from two to twenty minutes. They then became slate coloured and this stage lasted from one to eight minutes. In both this and the first stage his tactile sense was greatly impaired. He said that he had often picked up articles at this period of an attack and found his fingers seemed very large and clumsy. They then became purple and lastly red. During this final

stage he had a feeling of pins and needles. His fingers remained red for five or six minutes and then gradually resumed their normal colour. The whole attack varied in length from five minutes to three-quarters of an hour. He often perspired a great deal during an attack. The change of colour always began at the tips of his fingers and gradually spread upwards. He had noticed that sometimes after an attack he had difficulty in bending his fingers. His feet had always been apt to become cold but the attacks were never as bad as in his hands. Until January, 1904, the attacks in his feet did not cause him any trouble. He was at that time suffering from a severe cold which he had had for eight or nine days and on the morning of Jan. 23rd, which happened to be very cold, he had gone out to see his medical adviser. He woke up at 2 A.M. on the 24th feeling as if he had lost the big toe of his right foot. On looking at it he found (to use his own expression) "that it was as white as milk and as cold as a stone," all sensation in it being lost. He rubbed it and about 7 A.M. the colour began to return in it, whilst at the same time it became very painful. After this it did not trouble him again until the following night when he had another attack of a similar kind, and on the 28th the big toe of his left foot began to be affected in the same way. The attacks became more numerous, especially on the right side, and on the 29th were nearly continuous. He had gnawing pain in the intervals. Since then his attacks had not been quite so frequent. He said that when he was ill with the catarrh his urine was of the colour of pickled cabbage. It is, therefore, highly probable that at this time he was suffering from hæmoglobinuria.

FIG. 1.

Right foot, Feb. 6th.

On admission the attacks were present in his right foot, across the proximal ends of the toes. He had no feeling in the big toe of his right foot which was quite gangrenous. Over the rest of the foot he had a greatly increased sense of pain (a pin prick causing him great agony). The skin over the big toe at its last joint was dark blue. Above this and at the base of the other toes the skin was of a bright red colour. The superficial veins over the front of the leg were dilated. The other foot was normal in colour and he had no pain in it. His alimentary and respiratory systems were normal. His heart was of normal size and no adventitious sounds were present. His pulse was 90 and regular and his arteries were not thickened or tortuous. He had some scleroderma on the palms of his hands and also slightly on the soles of his feet. His sensation was normal except in his hands and feet during an attack when tactile sensation was diminished. He also had a greatly increased

FIG. 2.

Right foot, Feb. 7th.

sense of pain in his right foot; his appreciation of heat and cold was normal. The plantar reflexes were absent and the knee reflexes were very much diminished. He had tremors of his hands and tongue and his wife said that he was a very nervous man. No eye symptoms were present. His urine was acid, with a specific gravity of 1025; there was no deposit and it contained no blood or albumin.

The patient's blood was examined by Dr. T. Law Webb who has kindly allowed Dr. Strange to publish his report which was as follows: "Red corpuscles, 3,000,000 per cubic millimetre; white corpuscles, 54,542 per cubic millimetre; hæmoglobin, 70 per cent.; and colour index, 1·16. The white corpuscles were made up as follows: polynuclears, 33272; small lymphocytes, 4363; large lymphocytes, 2181; eosinophiles, 12545; mononuclears, 1636; transitional, 500; and mast cells, 45; so that the patient had a colour index above 1 and also a very large increase in the number of eosinophiles. The percentage number of white corpuscles was: polynuclears, 61; lymphocytes, 12; eosinophiles, 23; and mononuclears, 4."

The patient was put to bed and kept as warm as possible, his feet being wrapped up in wool. He was given liquor

trinitrini and potassium iodide and for his pain when an attack was in progress nepenthe was administered. On Feb. 6th his right foot was very red and inflamed (see Fig. 1) and was very painful. On the 7th it appeared to be much better and was of a light pink colour except the big toe and two outer toes which were blue (see Fig. 2). On the 8th, as he did not appear to be getting any better, injections of strychnine and liquor trinitrini were given and this time he also had pain of a spasmodic character in his abdomen and complained that his ears got cold and numb. On the 9th he still complained of a great deal of pain and his right foot did not look so well. The skin had by then died over the fourth and fifth toes, also there were some necrotic-looking areas over the dorsum of the foot, as shown in Fig. 3. The same morning he had pain

FIG. 3.

Right foot, Feb. 9th.

again in his left foot which was not discoloured and was quite warm. At night the right foot was so painful that lead and opium fomentations were put on and injections of morphia were given hypodermically. On the 10th the foot was looking worse and he suffered much pain. The leg from the ankle to the knee was painted with glycerine and belladonna. On the 11th his leg felt better but he was delirious in the evening with pupils dilated widely. The glycerine and belladonna were discontinued. On the 16th the man looked worse and the gangrene of the right foot had spread. As he was suffering great pain he was given liquor opii sedativus and potassium bromide every four hours. On the 17th the foot looked worse but he had no pain. His mind wandered a good deal during the night when his temperature went up to 103° F. It remained now continually above 100°. On the 20th the gangrene had spread as far as the ankle, it being always dry in character. Where the skin was left it was dry and white and the gangrenous portions were purple with a bright pink edge separating them from the healthy tissue above. On the 23rd a consultation was held and it was decided to amputate the right foot. At this time the big toe of his left foot was of a slate-blue colour. On the 24th the patient was very ill during the night, his temperature varying between 102° and 99°. On the 25th it was decided that he was too ill to bear an operation and he died the same afternoon. Permission for a post-mortem examination was not obtained.

Remarks by Dr. STRANGE.—For permission to publish the notes of the case I am indebted to Dr. Cureton and for the account of the interesting blood changes to Dr. Law Webb.

DURHAM COUNTY HOSPITAL.

A CASE OF DOUBLE MULTILOCULAR CYST OF THE OVARIES.

(Under the care of Dr. S. W. PLUMMER.)

THE patient, a single woman, aged 46 years, was sent to the Durham County Hospital by Dr. W. R. D. Daglish of Ferryhill on Oct. 5th, 1903. She had always been a healthy woman. Her menstrual history was quite normal, the menopause taking place two or three years before. About ten weeks previously to admission she noticed a swelling in the abdomen and had frequent micturition but with no pain. She was still able to continue at work. Eight weeks before admission she received an accidental blow from a man's elbow on the left side of the abdomen. This gave her great pain and she had to leave her work. She now had pain on micturition and the bowels, which formerly had always been regular once a day, became confined and she had to take aperients. The swelling rapidly increased after the blow, till on admission the physical signs were such as are shown

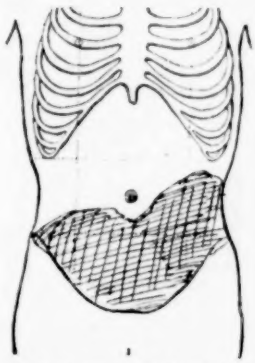


Diagram to show extent of the dull area.

on the accompanying diagram, the shaded portion representing approximately the dull area of the tumour.

On Oct. 9th the abdomen was opened in the middle line. There was a considerable quantity of free fluid in the abdomen. On passing the hand into it it was evident that a huge multilocular cyst had to be dealt with. No adhesions were to be felt and the incision was enlarged upwards beyond the umbilicus in order to deliver the tumour. On exploration of the tumour it was found to be divisible into two parts at the sulcus marked in the diagram. The finger easily separated some soft adhesions and when the mass was lifted out of the abdomen it fell apart into two typical multilocular cysts of the right and left ovaries, each with a broad pedicle. In order to facilitate delivery some of the larger loculi in each tumour had been emptied, the contents being characteristic of the condition. The right tumour was of about the size of the fœtal head at term, the left being half as large again and more irregular in form. The pedicles, which were easily defined (that on the left side having some soft adhesions to the adjacent bowel), were tied with stout Chinese silk by a Staffordshire knot and the tumours were removed. The abdominal wound was closed in layers in the usual way. The after progress was quite uneventful. The wound was dressed for the first time on the tenth day and being soundly healed all stitches were removed.

Remarks by Dr. PLUMMER.—I think a brief record of this case is of interest. So far as I can learn the presence of two such large and fully developed cysts springing simultaneously from either ovary is rare. Kelly[1] mentions that dermoid cysts are not infrequently associated with ovarian cysts of the opposite side. Though Dr. Daglish sent the case to me as one of ovarian multilocular cyst I confess that I had doubts about it till the abdomen was opened. The patient's appearance rather suggested a malignant growth than the "facies ovariana." Still less did I anticipate having to deal with two such large cysts or so easy an operation. For the clinical notes I am indebted to Mr. W. Pattullo, house surgeon, and to Dr. Daglish.

[1] Operative Gynecology, vol. ii., p. 260.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

The Effects of a Proteid Dietary (Raw Meat).—The Limitations of Leucocytosis as a Sign for Operation in Appendicitis.

A MEETING of this society was held on May 11th, Sir R. DOUGLAS POWELL, Bart., the President, being in the chair.

Dr. D. CHALMERS WATSON read a paper on the Effects of a Proteid Dietary and gave an account of the clinical and pathological appearances observed in an experimental investigation on the prolonged feeding of fowls—for 16 months—on a diet of raw meat. The research was intended to confirm, or otherwise, the recent work of Kionka on avian gout. The experiment was unsuccessful so far as the induction of gout was concerned. This negative result was itself of interest and this was enhanced by the changes incidentally observed in the thyroid, parathyroid glands, bone marrow, and other tissues in the non-tuberculous fowls and by the distinctive character of the reaction in a tuberculous subject. The main points to which attention was directed were, first, the absence of any indication of (*a*) gout, (*b*) renal disease, and (*c*) vascular disease; secondly, the variety in the clinical features observed in the different subjects (the clinical symptoms involved mainly the cutaneous and nervous systems); thirdly, the changes in the thyroid (hypertrophy) and parathyroid glands (hypertrophy) and bone marrow; and fourthly, the very favourable manner in which one fowl affected with well-marked tuberculosis was influenced by the diet. The application of these facts to disease was shortly discussed under the following headings: first, the rôle of a proteid dietary—a diet rich in nucleins—in the induction of gout; and, secondly, the dietetic treatment of tuberculosis with special reference to the use of raw meat as a curative agent.—The PRESIDENT asked whether the excreta had been examined and analysed. He doubted whether the mechanism for the elimination of uric acid and urea in the fowl was altogether comparable to the renal excretion in man. He asked whether the meat taken was passed through the intestine incompletely digested, for it had been shown that such was sometimes the case in men fed on a meat diet. He asked whether there was any evidence that the fowls suffered from scurvy. He said that it had been observed in man that a raw meat diet was beneficial in tuberculosis.—Mr. WALTER EDMUNDS said that the microscopical specimens of the thyroid gland showed a marked increase in the size of the vesicles. This was the first instance, so far as he knew, in which an enlarged thyroid had been produced experimentally.—Dr. WATSON, in reply, said that he had not analysed the excreta of the fowls fed on an exclusively meat diet but that Kionka had made such an investigation. It did not, in his opinion, yield any satisfactory result. He thought that fowls had an equal capacity of dealing with an increase of uric acid as man had of dealing with urea. None of the fowls had manifested any evidence of scurvy.

Dr. HERBERT S. FRENCH read a paper on the Limitations of Leucocytosis as a Sign for Operation in Appendicitis. The paper was based on a study of the leucocyte counts in 83 consecutive cases of appendicitis in Guy's Hospital. The cases had been arranged in four main groups, the classification being based upon the character and course of the disease in each case and not upon the leucocyte changes. The four groups were: first, those with local signs and no tumour, spontaneous recovery; secondly, those with local signs and a definite tumour, spontaneous recovery; thirdly, those with local signs and a definite tumour, evacuation of pus; and, fourthly, those with general peritonitis. The leucocyte counts were recorded for each of the cases in every group and it was found that many cases in which spontaneous recovery occurred, without clinical signs of rupture of an abscess into the bowel, gave leucocyte counts exceeding 20,000, a few exceeding 30,000. Many cases in which pus had to be evacuated gave low leucocyte counts. Therefore, the leucocytosis alone could not be taken as a proof positive of pus, or of its absence, when it did not exceed 30,000. Many cases in which pus was present showed from 35,000 to 56,000 leucocytes, however, and no simple case reached these figures. A leucocyte count, therefore, of 35,000 or more could be regarded as strong evidence of pus, though lower figures left the question doubtful. More important than the total count was the rising of leucocytosis when counts were made at intervals. No such rising count occurred in any simple case; pus was present whenever successive counts showed increasing numbers. The reverse was not true; sometimes pus was present, though successive leucocyte counts showed progressive diminution. The sign, therefore, was valuable but had great limitations; it might mislead if attention were paid to it alone. It must be taken into account but only in association with the pulse-rate and the general condition of the patient. It was one of several clinical signs, variable like the rest, but often of great value in a difficult case.—Mr. L. S. DUDGEON said that in the examination of the blood for leucocytosis it was necessary (1) to count the number of leucocytes; (2) to make a differential count; and (3) to stain a blood film in a special method. The rise in the number of leucocytes was not necessarily an indication of pus. Even when between 20,000 and 30,000 were found it was not absolute proof of suppuration. He considered the differential count was most important, for the polymorphonuclear neutrophiles, which usually were about 65 per cent., rose to from 80 to 90 per cent. and in one case as high as 99 per cent. He did not consider that the special selective stain described by Ehrlich was of much value. He thought that if there was a leucocyte count of 30,000 with 80 per cent. polymorphonuclear neutrophiles or 15,000 leucocytes with 90 per cent. polymorphonuclears the probability of pus being present was very great, though even this was not absolutely diagnostic. In intestinal obstruction the leucocytosis might reach a very high figure, even as high as 50,000 or 80,000.—Dr. G. NEWTON PITT referred to a case of appendicitis with pylephlebitis which gave no increase in the number of leucocytes. The infection was due to the bacillus pyocyaneus.—Dr. FRENCH replied.

MEDICAL SOCIETY OF LONDON.

A Study of a Case of Rheumatic Fever.—The Influence of Early Operation on the Mortality and Results of Appendicitis.—Election of Officers.

A MEETING of this society was held on May 9th, Dr. F. DE HAVILLAND HALL, the President, being in the chair.

A general meeting was first held to receive the annual reports of the council, librarian, and chairman of the house and finance committee. Certain alterations were made in the laws of the society and two auditors were appointed to audit the balance-sheet for the year ending Sept. 30th.

At the ordinary meeting which followed Dr. F. J. POYNTON communicated a paper entitled "A Study of a Case of Rheumatic Fever." The first part of the paper described the clinical details of a fatal case of rheumatic fever in a child, aged nine years. The child had been under Dr. Poynton's observation at intervals for over a year and had twice been an in-patient in the Hospital for Sick Children, Great Ormond-street—on the first occasion with chorea in July, 1902, and on the second with the fatal illness in August, 1903. The cause of death was malignant rheumatic endocarditis attacking the mitral valve when in the early stage of stenosis. The necropsy was briefly described as were the bacteriological investigations which were made immediately after death. The post-mortem examination showed the absence of pericarditis and the presence of malignant mitral endocarditis. The diplococcus was isolated in pure culture from the mitral valve, the kidneys, and the spleen. Dr. W. Vernon Shaw with one of these cultures made experimental investigations and produced the lesions of rheumatic fever in rabbits and monkeys. The susceptibility of monkeys to this infection, as shown by Dr. Shaw, was a new and valuable point. A section of the mitral valve and specimens of the endocarditis produced in the animals were shown. Dr. Poynton claimed that this case afforded strong support to the infective view of the origin of rheumatic fever. It was the twenty fifth of a series of fatal cases, of which he had investigated 24 with Dr. Alexander Paine. In the second part of the paper the practical bearings of the infective nature of rheumatic fever were commented upon. First, it became clear that it was as essential to study the early warnings of this disease as it was those of tuberculosis; secondly, it enabled them to speak with certainty of the existence of a truly rheumatic broncho-pneumonia and pleurisy, a rheumatic peritonitis, and a renal rheumatism; and, thirdly,

the ability to produce with comparative constancy experimental heart disease marked a forward step in the history of the study of this condition. By the aid of this method it had been been shown that simple and malignant endocarditis might be phases in the same disease and that rheumatic fever was a cause of malignant endocarditis. Ante-mortem thrombosis and disease of the myocardium in rheumatic fever were also by the same method established as facts. The occurrence of infarction without visible valvular disease or clotting in the chambers of the heart had also been demonstrated—a fact which had close bearing on the pathology of chorea. The power to isolate an infective agent brought observers nearer to the chemical problems of rheumatic fever. Triboulet, Walker and Ryffel, Shaw, and Berger had already investigated the acids that were formed by the micro-organism. But not only did this view enable them to establish facts, it also threw out suggestions to guide them in unravelling some of the more difficult problems of rheumatism. The possibility that the micro-organism might remain latent in the tissue—a very reasonable one—threw light upon all chronic and relapsing rheumatic affections. That rheumatic fever was the result of an infection pointed, in Dr. Poynton's opinion, very strongly to the probability that a study of bacterial poisons would throw light upon gout and would enable observers to escape from the narrow views of that disease founded upon the uric-acid theory. Then, again, it would now be possible to reconstruct the skeleton of "rheumatism" from a study of the cardinal lesions of rheumatic fever. These cardinal lesions were in their structure similar; the nodule, the endocarditis, the pericarditis, the pleurisy, and the arthritis showed similar changes in their tissues. It was possible, then, that the deviations from this type would be comparable. Lastly, the treatment of rheumatic fever and rheumatism was advanced, not by the brilliant discovery of some anti-toxin, it was true, but, nevertheless, quietly and surely. Thus the active phase of the disease and the active phase of the resistance to the disease were now more easily traced and the proper time at which to use hydropathic measures, radiant heat, massage, and electricity was more easily seen. Surgical measures undertaken for the treatment of severe arthritis rested on a surer basis and it was equally clear that, since the first site in which the micrococcus was deposited was not the synovial fluid but the synovial membrane, all hasty surgical measures were out of place. But it was in the prophylaxis of rheumatic fever that this view was of the greatest importance. In Dr. Poynton's opinion the time had come thoroughly to reinvestigate the causation and prevalence of rheumatic fever as an infective disease and he maintained that such a step would lead to the prevention of much organic heart disease among the children of the poor. —Dr. A. E. GARROD remarked on the confirmation which Dr. Poynton's paper gave to the infectivity of rheumatism. The opinions on the pathology of gout were constantly undergoing change, but it was difficult to accept the view of its infectivity. He (Dr. Garrod) was rather inclined to go back to the older uric acid theory of gout.—Mr. A. MARMADUKE SHEILD, speaking of the surgical aspect of such cases, remarked that some cases were extraordinarily benefited by opening and washing out of the joints, as originally adopted by Dr. J. O'Conor of Buenos Ayres. This method was also efficacious in cases of gonorrhœal arthritis and this suggested that the microbes and toxins were largely shed into the synovial fluid of such joints.—Dr. PAINE suggested the propriety of using urinary antiseptics in cases of rheumatic fever, both as therapeutic and prophylactic agents.—Dr. B. L. ABRAHAMS had examined the post-mortem records of the Westminster Hospital and found several types of rheumatic endocarditis. Salicylates reduced the joint swelling and the pain in rheumatic fever, but he doubted if they were really curative.—Dr. POYNTON replied.

Mr. W. H. CLAYTON-GREENE read a paper on the Influence of Early Operation upon the Mortality and Results of Acute Appendicitis. Tables of results in 202 cases were submitted. The following conclusions were arrived at: (1) that not only was the number of cases of appendicitis greater than formerly but the disease was increasing in severity; (2) acute appendicitis could not be dissociated from some degree of peritonitis; (3) there were four main forms of peritonitis, two of which were slight and two serious, and there were no data for determining which variety would occur; (4) the results of early operation showed not only a diminished death-rate but also fewer sequelæ; and (5) the mortality apart from the early operation was probably not under 20 per cent. and this figure was unpleasantly high.—Mr. A. E. BARKER congratulated Mr. Clayton-Greene on his painstaking researches but confessed that he (Mr. Barker) was unable to derive much clinical help or guidance from statistical methods applied to this subject.—Mr. SHEILD remarked on the complexity of cases of appendicitis and the impossibility of grouping them satisfactorily. In cases which set in suddenly and severely there was nearly always grave mischief and early operation was called for; so also in young subjects. He was more and more convinced that early operation was a safeguard though no doubt some cases were thus operated on which would have got well without.—Mr. W. MACADAM ECCLES concurred with the last speaker. The stage at which the case came under observation was a most important factor; many cases were, however, brought from a considerable distance.—Dr. H. A. CALEY referred to some comparative returns he had obtained from medical and surgical wards. He advocated operation at the earliest possible moment.—Mr. J. D. MALCOLM referred to a case illustrating the complexity of the subject.—Mr. CLAYTON-GREENE replied.

The result of the ballot showed that the following gentlemen had been elected for the session commencing October, 1904:—President: Mr. J. Langton. Vice-Presidents: Dr. C. E. Beevor, Mr. B. Pitts, Dr. E. J. Nix, and Mr. Charters J. Symonds. Treasurer: Mr. D. H. Goodsall. Librarian: Dr. A. F. Voelcker. Honorary secretaries: Mr. H. J. Waring and Dr. J. S. R. Russell. Honorary secretary for foreign correspondence: Dr. H. D. Rolleston. Council: Mr. A. E. Barker, Sir Hugh R. Beevor, Dr. J. V. Bell, Mr. C. C. Braine, Dr. H. A. Caley, Mr. Albert Carless, Dr. C. W. Chapman, Dr. H. Corner, Dr. Lovell Drage, Dr. F. de Havilland Hall, Mr. Richard Lake, Dr. A. H. N. Lewers, Mr. T. H. Openshaw, Dr. F. S. Palmer, Dr. J. E. Ranking, Dr. A. H. Robinson, Mr. A. W. Mayo Robson, Mr. W. G. Spencer, Dr. G. C. Steele-Perkins, and Mr. C. S. Wallace.

OBSTETRICAL SOCIETY OF LONDON.

Sarcomatous Fibro-myoma.—Hæmatoma and Hæmatocele.

A MEETING of this society was held on May 4th, Dr. EDWARD MALINS, the President, being in the chair.

Dr. P. HORROCKS showed a specimen of Fibro-myoma undergoing Sarcomatous Degeneration removed from a patient 46 years of age; abdominal hysterectomy was performed owing to rapid growth of the fibroid in association with menorrhagia. He remarked that some authorities still disbelieved in the possibility of sarcomatous change in a fibro-myoma of the uterus and referred to similar cases published by Doran and Finlay and to another previously published by himself.—Mr. ALBAN H. G. DORAN said that he doubted whether these tumours, said to be "sarcoma" histologically, were clinically malignant. One observer had in a large series of uterine fibroids made out malignant elements in 10 per cent. of all the cases, a proportion quite at variance with clinical experience. Mr. Doran suspected that the cells which were large and spindle-shaped, might be altered plain muscle cells. Histological elements of that kind when subjected to morbid influences assumed strange appearances, especially when a number were seen in section, cut longitudinally, transversely, and obliquely.

Mr. ALBAN DORAN read a paper entitled "Hæmatoma and Hæmatocele, a Study of Two Cases of Early Tubal Pregnancy." He said that it was generally taught that hæmatocele associated with interrupted early tubal gestation demanded operation whilst a hæmatoma or extraperitoneal hæmatocele under the same conditions would subside if the patient was kept at rest. Two cases which did not support this teaching were related and discussed at length. In the first case the patient passed clots over two months after the last period, pelvic pain set in, and a swelling could be detected in the right fornix and iliac fossa. A week later a decidua was expelled; then a mass with all the characters of a pelvic hæmatocele developed and became harder and smaller during prolonged rest. Menstruation was re-established within two months. In the second case the patient was seized with vomiting and pain in the right iliac fossa when a period was due. Four days later uterine hæmorrhage set in. A swelling could soon be defined above the pubes; its lower limits formed a convex mass behind the cervix, simulating a hæmatocele in Douglas's pouch. This swelling

steadily increased in size. A month after the beginning of the symptoms a decidua was passed; 11 days later acute internal hæmorrhage occurred. Mr. Doran operated and discovered a very large hæmatoma containing four pounds of old clot. The uterus, appendages, and pelvic peritoneum were entirely above the clot and formed its capsule. The right tube had burst between the folds of the broad ligament so that a hæmatoma developed and ultimately leaked into the peritoneal cavity which contained a little recent clot. The uterus and appendages were removed with the clot; the cervix was saved. A show of blood was seen twice within seven months after the operation. The nature of the first case was evident, for there were a bleeding tubal mole on the right side and a pelvic hæmatocele as its consequence. The lower part of the hæmatocele formed a convex mass in Douglas's pouch. In the second case it was proved at the operation that there had been originally no hæmatocele whilst a great quantity of blood escaped between the folds of the broad ligament. The blood had raised up the peritoneum of Douglas's pouch which encapsuled its upper part, as in the case of a large cyst or fibroma of the broad ligament. The convex mass behind the cervix was therefore not in Douglas's pouch, which did not exist, but represented the lower limits of the entirely subperitoneal hæmatoma. The acute symptoms were caused by secondary rupture into the peritoneum. The hæmatoma was the homologue of the posterior tubo-ligamentary pregnancy of Taylor but the products of conception had been completely destroyed. The secondary rupture into the peritoneal cavity was the homologue of Taylor's fourth class of tubo-abdominal pregnancies. Mr. Doran expressed the opinion that hæmatoma was probably not so amenable to expectant treatment as was generally taught, its dangers being underrated, whereas the dangers of hæmatocele had been apparently overrated.—Dr. HORROCKS said that he believed that extra-uterine fœtation was much commoner than was supposed and that many cases recovered without being diagnosed or treated. Moreover, he had seen many cases recover without operation, though occasionally operation became urgently necessary even in cases in which resolution had been going on apparently normally for weeks. He had failed to discover in Mr. Doran's paper any indication which would serve to diagnose a hæmatoma, such as the one described, from an ordinary hæmatocele.—Dr. C. J. CULLINGWORTH said that from his own experience (1 in about 70 cases) and from what he had gathered from reading he must still continue to regard pelvic hæmatoma as a rare complication of interrupted tubal pregnancy and an extensive hæmatoma such as Mr. Doran had described as exceedingly rare. With regard to treatment the cases on record were at present far too few to justify the formation of definite conclusions. He gathered that Mr. Doran was unable to assist in diagnosing an extensive hæmatoma from hæmatocele.—Mr. JOHN W. TAYLOR said that in one sentence in his book (which Mr. Doran had quoted) he had stated that a broad-ligament hæmatoma due to tubal pregnancy might be absorbed and undergo a natural cure, but this was inserted rather in deference to popular teaching than as the result of personal observation. So far as his own experience went, the only recoveries without operation which he had himself observed were the seven or eight cases of peritubal hæmatocele, most of which were referred to in his book. He had always held and taught that whereas hæmatoma due to other causes than tubal pregnancy was very generally easily absorbed a broad-ligament pregnancy and hæmatoma due to broad-ligament pregnancy were specially dangerous. His opinion regarding the general danger of expectant treatment in tubal pregnancy and the advisability of operation was the result of personal observation and experience. He believed that ligamentary invasion and hæmatoma were always a rather rare result of tubal pregnancy.—Dr. AMAND J. M. ROUTH related a case of hæmatoma of the broad ligament following tubal rupture, where the extravasated blood had stripped up the retro-uterine peritoneum but did not cause the formation of a convex tumour as felt per vaginam but rather a concave hardness.—Dr. G. F. BLACKER said that he had met with two examples of a hæmatoma of the broad ligament. In the first case the abdomen was opened and the blood was removed, the patient doing well, while in the second case, that of a patient with a typical history of extra-uterine gestation admitted into the Great Northern Hospital, he had been able to confirm the disappearance of the tumour at a subsequent operation. At the first operation, which was performed on June 13th, 1902, the left broad ligament was found to be distended to the size of a fœtal head by a tumour of softish consistence, evidently blood clot. The patient made a good recovery and when she left the hospital the tumour was a little smaller. In February, 1904, she returned with a ventral hernia, no doubt due to the gauze plug which had been used for the arrest of hæmorrhage at the first operation. The abdomen having been reopened for the purpose of dealing with the hernia the tumour on the left side was found to have disappeared entirely and except for some adhesions the left broad ligament was normal.

OPHTHALMOLOGICAL SOCIETY.

The Retina and Optic Nerves in Anencephaly.—Trachomatous Pannus and its associated Corneal Changes.—Some Unusual Cases.—Trichiasis and the Operation for its Relief.

AN ordinary meeting of this society was held on May 5th, Mr. JOHN TWEEDY, the President, being in the chair.

Mr. M. S. MAYOU made a communication on the Retina and Optic Nerves in Anencephaly. He had collected accounts of 38 cases in literature in which, however, little reference to the state of the retina was made. Having reviewed the accepted accounts of the development of the optic tracts and retina he illustrated by photographs how in anencephaly the globes were normal in appearance, while the brain, medulla, and upper part of the spinal cord were absent; there were no vault to the skull, no cerebral substance, and no olfactory lobes. The optic nerve was lost posteriorly in the dura mater while anteriorly it lacked its accessory envelopes. There were no axis cylinders in the fibrous reticulum of the nerve as seen in cross section and the papilla exhibited a very deep cup. In the retina, however, the various layers were represented, rods and cones, nuclear and granular zones, and ganglion cells. The appearance of the various parts was illustrated by lantern slides and Mr. Mayou argued that the occurrence of a fully developed retina without nerve connexion or existence of a brain indicated separate formation and required a different explanation to that hitherto received.

Major H. HERBERT, I.M.S., read a paper on Trachomatous Pannus and its Associated Changes, dealing mainly with the clinical aspects of the less common and less recognised forms of pannus. In India the earliest stages of acutely progressive pannus were frequently seen as a quite superficial vascular ingrowth all round the margin of the cornea, the closely-set vessels ending at a defined border. This marginal vascular zone of cornea did not stain with fluorescin but the whole of the inclosed central area was coloured diffusely with a rather strong solution of the stain. From this early condition, which was seen with transient attacks of conjunctivitis, the changes progressed in cases of trachoma, the marginal vascular zone broadening yet still retaining a defined margin, while the central area became steamy and opaque. Lymphoid formations were sometimes seen in mild chronic pannus as flattened nodular elevations in the upper half of the cornea, either confluent or separate, and often overlapping the scleral margin. In pannus crassus there were often, as was well known, buried lymphoid follicles. The slightly rough surface in pannus crassus stained feebly with fluorescin and the general inflammation was of so high a grade that the vascular covering was incompletely protective. In early follicular conjunctivitis it was not rare to find a narrow translucent rim of thickened limbus surrounding the cornea and the thickening was often seen to consist of partly separate follicle-like elevations. Under the name "upper marginal pitting" a curious condition was described. Mild chronic pannus in some eyes left a row of small round areas unaffected or but little affected. These clearer spots were usually seen as shallow pits which in natives of India became more or less pigmented; they corresponded in situation with the points where lymphoid formations first and most frequently developed. As a result of pannus ulceration the formation of clear curved gutters was especially referred to, also the possibility of confusion with Mooren's ulcer. The possible inflammatory absorption of corneal tissue without ulceration was shown. And finally, rare opaque thickenings, possibly epithelial in nature, were mentioned.

Dr. W. C. ROCKLIFFE related some exceptional cases,

1. A girl, aged 18 years, whom he saw in 1898 with Gradual Deterioration of Vision for 12 months from Optic Atrophy. She had never menstruated. Vision in the right eye was $\frac{6}{6}$ and in the left $\frac{6}{18}$. Six years later vision had diminished to "perception of light" in the right eye and was little better in the left. There was still no menstruation. The abdominal and thoracic organs appeared to be normal but there was an infantile uterus and undeveloped sexual organs. 2. A case of Optic Neuritis following a blow on the right eyeball without any injury to the head. The left eye was unaffected. The right eye presented acute iritis, acute optic neuritis, and a central hæmorrhage in the yellow spot. Vision was reduced to perception of fingers in the periphery only but improved to $\frac{6}{9}$ and later to $\frac{6}{6}$ and $\frac{6}{5}$ with a correcting glass. Now there was choroidal atrophy but all trace of optic neuritis and hæmorrhage had disappeared. 3. A man, aged 78 years, underwent an operation for Cataract Extraction in the Right Eye which was soft. Subsequently a washleather-like membrane spread round the cornea, involving the palpebral conjunctiva. The cicatrix was grey but not purulent and there was no discharge. Exfoliation of the corneal conjunctiva occurred and the eye was excised. Tension was normal. Bacillus diphtheriæ could not be found. 4. A series of seven cases, including residents, students, and nurses, who were all affected in the right eye from attending a case of tracheotomy in a child with diphtheria. The affection commenced with itching in the lower lid, a sensation as of sand in the eye, with œdema, pain, and granular swelling of the conjunctiva, the other eye later being affected. The appearance was that of granular ophthalmia. There were malaise and depression. Staphylococcus pyogenes aureus was isolated, though the child presented undoubted bacillus diphtheriæ.

Mr. R. W. DOYNE read (on behalf of Mr. W. E. CANT) a paper on Trichiasis and the operation for its relief. The prevalence of this disease in Egypt and Palestine might be inferred from the returns of 5050 cases in which there were affections of the eyelids, conjunctiva, or cornea in a total of 6052 eye cases. This resulted largely from acute ophthalmia and trichiasis followed in a large proportion, the ages of the patients ranging from four to 80 years. The modifications in Snellen's original operation recommended and practised were as follows: 1. The incision in the upper tarsal cartilage, instead of being a V-shaped notch through half the thickness, should be a U-shaped trough entirely through the cartilage. 2. The sutures, instead of being inserted just beyond the edges of the notch, should penetrate the lid on the ocular side of the lashes below and pass through the tarsal cartilage well above the incision above. The tarsal groove should be made as close as possible to the hair bulbs so as to leave as light a flap as possible below and as much tarsal cartilage as feasible above. The tying of the sutures then effected a much greater eversion of the edge of the lid, which was necessitated by the fact that it might be six times the normal thickness. 3. Division of the outer, and even of the inner, canthus might be needed before the lids could be efficiently everted and might be effected with sharp scissors. 4. A further means of eversion in severe cases was the removal of triangles of skin above and below either canthus, the fresh edges being sutured together respectively.

Various cases and specimens were also shown.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Tuberculous Arthritis in the Young.

A MEETING of this society was held on May 4th, Professor JOHN CHIENE, the President, being in the chair.

The following gentlemen were elected corresponding members: Dr. Robert H. Badcock, Dr. Douglas Argyll Robertson, Dr. D. D. Stewart, and Dr. K. F. Wenckebach.

Mr. ROBERT JONES (Liverpool) gave a lecture-demonstration on the Treatment of Tuberculous Arthritic Diseases of the Young, a subject which he had chosen, first, because at an early period he had been associated with the late Hugh Owen Thomas who advocated conservatism in the treatment of these diseases; and, secondly, because there might be many differences between his own practice and that of the surgeons of Edinburgh. The Thomas treatment, he said, was based on a theory of mechanical and physiological rest. Mechanical rest of the articulation was attained by carefully attaching it to a rigid iron frame; physiological rest was attained by allowing free circulation through the joint hampered as little as possible by circular compression. He argued that rest of the joint was hindered by extension and that where traction appeared to benefit it was in virtue of the fact that traction must needs be accompanied by a certain degree of fixation. Friction he thought, as represented in these days by passive movements, to be a much more dangerous proceeding than mere pressure of one joint surface upon another. In 15 years Mr. Thomas had never performed an excision of a joint, although many hundreds of cases passed through his hands and his percentage of abscess formation was unusually low. In those early days Mr. Jones had had exceptional opportunities of watching the progress of such cases and he was sure that neither before nor by any methods since had he seen anything approaching to the consistently good results which Mr. Thomas obtained. Mr. Jones drew attention to two symptoms which, if properly interpreted, were of considerable value. These were rigidity and deformity. One of the first and most trustworthy accompaniments of arthritis was rigidity. It generally preceded pain and was earlier ascertained than muscular shrinkage. This rigidity affected the arthritic joint in all directions—flexion, extension, abduction, adduction, and circumduction. In a suspected joint, if there were no limitation of movement there was no arthritis. In early cases the rigidity must be examined for without an anæsthetic as it was primarily due to muscular action. Later, contractures or muscle shortening followed as a secondary effect but diagnosis would be then obvious. As illustrations, a girl might complain of pain in the dorso-lumbar region of her back but at the same time might be quite able to flex or to extend the spine or to move it laterally. In such a case spondylitis could be safely excluded. Another girl might be very tender over the spine and have difficulty in flexing the column, but she could hyper-extend it with ease and here again the suspicion of tubercle could be placed aside. In a third case the spine might be rigid in all directions and this symptom was quite in accord with an inflammatory vertebral lesion. It was more trustworthy than any other single symptom or group of symptoms. Pain as evidenced by pressure on the vertebral spines was hopelessly untrustworthy and if present was an argument against rather than in favour of a Pott's lesion. The same considerations applied to the knee. If a youth complained of tenderness and swelling of a knee-joint which he was able fully to extend but could not fully flex, or *vice versâ*, he was certainly not suffering from tuberculous arthritis. If, however, both as to flexion and extension the knee had a diminished range of movement the existence of organic lesion became very probable. In cases of prolonged synovial effusion in joints where tuberculous infection had occurred the absence of rigidity might deceive but such effusions were rare in childhood. In the very early stages of hip disease lack of normal extension and rotation was more noticeable than were restrictions to flexion and the lateral movements, but a careful comparison between the movements possible at the two hip-joints would render the defect apparent to a practitioner familiar with this peculiar symptom. The Thomas flexion test was founded on the fact that it was impossible to extend an inflamed hip without producing lordosis. By lifting the knee of the sound limb until it touched the chest the pelvis was fixed and the spine was straightened. If there was flexion deformity the patient was unable to extend the thigh on the diseased side and it remained at an angle. If a healthy person was laid flat on his back on a table the hand might easily be passed under the lumbar vertebræ and if he was asked to touch the table with his back he was able to obliterate the hollow without lifting his limb. This was a ready guide for the detection of deformity. In no case of hip disease was the patient able to straighten his spine until art had stepped in and corrected the flexion deformity. The case of an infant required considerable delicacy. The child was laid on the table while the surgeon held a knee in either hand. The thighs were slowly flexed towards the chest when it would be observed that one easily yielded to full flexion while the other became a little rigid. The stiff hip was then allowed to fall while the sound one was fully flexed. It would then be seen that the diseased limb remained at an angle and could not voluntarily be fully extended. Although this test was not absolutely diagnostic, still, if the hip were complained of and pelvic, vertebral, sacro-iliac, and malignant disease were negatived, the surgeon might fairly infer the presence of

arthritis. The arthritic deformities in the hip consisted of flexion, internal rotation, shortening, and adduction; in the knee of flexion, subluxation, and external rotation of the tibia; in the back, of a kyphosis sometimes preceded by a lateral deviation; and in the shoulder of elevation of the shoulder girdle, adduction, and at a later stage of what Mr. Jones had described as a pathological subcoracoid displacement of the humerus. The spinal lateral deviation was very important clinically as it might be mistaken for scoliosis. In an early case of Pott's disease rigidity would be present. In lateral curvature rigidity was only present in the later stages where rotatory changes had occurred. As regards the treatment, the principal object was to protect from deformity, or if it had appeared to correct it; to immobilise the joint and so to relieve the muscles from spasm and then from contracture; to prevent bone destruction due to both attrition and pressure; and to relieve the joint from weight bearing. The all essential treatment was rest. For small children Mr. Jones employed a double splint as it was easier to apply and simplified nursing. In this frame the child was kept until all signs of disease were gone and the child was made to live in the open air. Such early cases improved generally, many recovering with moveable joints after the application of the splints for two years and it was rare to find a flexion deformity of more than 10°. Extension was hardly ever employed in early cases and the so-called night-jerks were hardly seen. The neglected child whose disease was more advanced and whose deformity was considerable presented some difficulties. The deformity was corrected under an anæsthetic. A direct pull by means of a thick skein of wool and counter extension by a sheet and division of the adductors, if tense, would generally equalise the so-called practical or apparent length of limb. The correction consisted in overcoming flexion and adduction and lowering the pelvis on the diseased side. Once in the abductor frame the limb was kept at absolute rest and the constant muscular pull upon the head of the femur, as evidenced by ever-increasing deformity, was overcome. Where the deformity was less marked the application of an abduction frame was sufficient. Generally speaking, Mr. Jones did not open tuberculous abscesses because the operation was incomplete if it could not remove the disease of which the abscess was but a symptom. If, however, with the presence of fluid there were discomfort, pain, and pyrexia, and if the patient was rapidly or steadily declining in condition, then the abscess might be incised and antiseptic irrigation adopted. Amongst the poor Mr. Jones had found nothing better as a dressing for abscesses than medicated sawdust. In the case of the hip the splint was kept on until consolidation of the structures was apparent, all deformity was gone, and the pelvis was lowered on the diseased side. Abduction should always be aimed at to compensate for shortening, the abducted limb being gradually brought towards the sound side and the double frame changed for a Thomas's hip splint. Walking should be allowed aided by patten and crutches. Although many joints recovered movement, Mr. Jones preferred an ankylosis to occur in severe cases, especially in the hip, the knee, and the ankle. Cases of active disease of the knee with marked flexion were placed in a Thomas's knee splint and could be straightened wholly or in part at once or by the pressure of a pad. This was much better than the weight and pulley. Subluxation of the tibia backwards was a most obstinate deformity and might even require a V-shaped excision for its treatment. The position of greatest utility should always be aimed at. This, in the hip, was abduction and full extension; in the knee, extension; in the ankle, an angle of 95°; in the wrist and spine, hyper-extension; and in the elbow, usually an angle of about 40°. In the treatment of spinal caries, even with the best mechanical means, it was difficult to influence curvature, especially so in the lower cervical and upper dorsal regions.

The PRESIDENT, Mr. C. W. MACGILLIVRAY, Mr. C. W. CATHCART, Dr. WILLIAM TAYLOR, Mr. DAVID WALLACE, Mr. H. ALEXIS THOMSON, and Dr. D. CHALMERS WATSON took part in the discussion which followed.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—A meeting of this society was held on April 15th, Dr. C. O. Hawthorne being in the chair.—Dr. James Taylor showed a boy aged five years with Congenital Proptosis and Meningocele. The mental condition was defective, recently his eyesight had been failing, and nystagmus and optic atrophy were also present.—Mr. Sydney Stephenson said that a mechanical factor was probably the cause of the neuritis as well as of the proptosis and divergence of one eye which were constant features of such cases.—Dr. J. Anderson Smith showed a girl, aged five years, who at the height of an attack of measles developed cerebral symptoms—namely, vomiting, squinting, retraction of the head, photophobia, and unconsciousness. At the end of five days the acute symptoms subsided but she was found to be aphasic, resented being touched, and wasted rapidly. There was no optic neuritis or ear trouble. A month later she was still aphasic, could not sit up in bed, moved her limbs in an ataxic manner, and appeared to have general cutaneous anæsthesia. There were slight rigidity of the limbs, ankle clonus, and exaggeration of the knee-jerks. More recently there had been gradual improvement in the motor power, she could say a few words, the ankle clonus had disappeared, and sensation was improving.—Dr. Hawthorne thought that the evidence of meningitis was not clear and suggested that the symptoms might have been due to some form of toxin. He recalled a somewhat similar condition in an adult after influenza.—Dr. Taylor agreed as to toxæmia connected with the measles being the probable cause.—Mr. Stephenson showed two cases of Microphthalmos, one slight, in a boy aged six years, and the other extreme, in a girl aged 16 months. He pointed out that a few years ago the latter would have been called a case of anophthalmos, because no eye was visible on opening the lids and it was only on deep palpation that a small pea-like body could be felt towards the back of each orbit. These small bodies in all probability represented rudimentary eyeballs, containing more or less immature nervous elements, and upon that ground he preferred to regard the case as one of microphthalmos.—Dr. E. P. Baumann showed two cases of Anæmia. The first was in an infant ten months old, who was obviously syphilitic and had an enlarged spleen. Blood examination showed merely the existence of a severe secondary anæmia. He considered the whole of the symptoms as secondary to syphilis. The second case was that of a girl, aged one and a half years, without evidences of syphilis, but with an enlarged spleen. Blood examination showed a well-marked leucocytosis and also a large number of nucleated red cells, a considerable proportion of which were megaloblasts. The case was probably one of pernicious anæmia in infancy.—Dr. A. Morison showed a case of Dactylitis with Subcutaneous Nodules in an infant aged 16 months. He regarded the case as tuberculous.—Dr. S. Vere Pearson showed as a case of Tuberculous Nodule in the Ponto-Medullary Tract a boy, two years old, who was suffering from weakness in, and disinclination for, walking, slight drowsiness, and squint in the left eye. There had been occasional retching and difficulty in walking. Definite right-limbed paresis—i.e., crossed paresis—had developed later.—Dr. E. Farquhar Buzzard referred to the rarity of tuberculous tumours in this region and to the fact that they were usually discovered accidentally after death, having produced no symptoms during life. He was inclined to regard the case as one of pontine tumour, probably gliomatous.—Dr. Hawthorne showed a boy, aged ten years, suffering from Paramyoclonus Multiplex. There were sudden, shock-like, clonic muscular contractions affecting both sides of the body at the same time. The bilateral and isochronous character of the contractions was well seen in the cremaster muscle. The muscles of the face, the trunk, and the thighs were also affected.—Mr. Leonard A. Bidwell read a paper on a case of Gonorrhœal Pyosalpinx in a girl, aged six years, treated by removal of the tubes.—Dr. George Carpenter read a paper on a case of Gonorrhœal Inflammation of the Uterine Appendages in a girl, aged three years, with spontaneous recovery.—Mr. R. C. Dun read a paper on a case of Post-hemiplegic Chorea, Petit Mal, and Mental Irritability treated surgically.—Mr. Bidwell read a paper on two cases of Strangulated Hernia in infants under one month old treated by operation.

GLASGOW NORTHERN MEDICAL SOCIETY.—A meeting of this society was held on May 3rd.—Dr. J. Galbraith Connal showed several cases illustrating Secondary and Tertiary Syphilitic Disease of the Throat and Nose and made remarks upon them. Photographs were also shown of a case with marked Nasal Deformity due to Syphilitic

Disease which was remedied by paraffin injection. The apparatus for the injection of paraffin was also shown. Dr. Connal advocated the use of paraffin of high melting-point.—A hearty vote of thanks was given to Dr. Connal for his interesting demonstration.—Dr. Alexander Johnston next read a paper entitled "Observations on the Value of the Widal Serum Reaction in Enteric Fever." He confined his remarks chiefly to the value of the reaction in aiding the recognition and notification of enteric fever in general practice. Of the cases of supposed enteric fever sent to hospital there was an error of only 16 per cent., a result which he considered very creditable to the practitioners. Of those which proved to be not enteric fever a considerable proportion were tuberculous in character. A few cases also, which were sent in under other diagnoses, particularly scarlet fever, were found to be cases of enteric fever. The Widal reaction consisted of the cessation of motion and agglutination of organisms when a small quantity of blood was mixed with them which had been taken from an infected animal. Blood was drawn from the lobe of the ear, caught in a sterilised tube, and taken to the laboratory. Here it was mixed with the active bacteria and if the patient from whom the blood was drawn were suffering from typhoid fever agglutination occurred. Points of importance in performing the test were that the blood must be diluted, the test culture must be young and pure, and there must be a time limit. The standard dilution was 1 in 50, the time limit was one hour, and the culture was one of less than 24 hours' old. In looking over a series of more than 300 cases four groups might be differentiated: (1) cases clinically enteric fever, yielding a positive reaction—over 240 cases; (2) cases clinically not enteric fever, yielding a positive reaction—about 30; (3) cases clinically enteric fever, yielding a negative reaction—some two cases; and (4) cases not clinically enteric fever, yielding a negative reaction—about 30. Probable sources of error were the existence of paratyphoid forms and late development of the agglutinating reaction, possibly appearing after the second or third week or during convalescence. A positive reaction might be obtained in those suffering from some other disease who had already had typhoid fever. The accuracy of the test was probably from 90 to 95 per cent. but in everyday practice with cases in the early stages there was probably an error of about 17 per cent.—Several questions having been asked by members and answered by Dr. Johnston he was accorded a hearty vote of thanks by the members of the society.

ERRATUM.—In the report of the meeting of the Wigan Medical Society on p. 1209 of THE LANCET of April 30th it should have been stated that the address on Ankylostomiasis was read by the President, Mr. J. Chronnell, and not by Mr. William Mitchell Roocroft.

Reviews and Notices of Books.

Nervous and Mental Diseases. By ARCHIBALD CHURCH, M.D., Professor of Nervous and Mental Diseases in the Chicago University Medical School; and FREDERICK PETERSON, M.D., President of the State Commission in Lunacy, New York. With 338 illustrations. Fourth edition, thoroughly revised. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Pp. 922. Price 21*s.* net.

THE first edition of this important work, which embodies some of the best features of neurological and psychiatrical study in America, was published in 1899. The present (fourth) edition has been considerably enlarged and new material added both in the sections of nervous and of mental disease, while the text has been revised throughout and a number of new illustrations have been added. The first 600 pages are devoted to the section on Nervous Diseases by Dr. Church, while the concluding 250 pages of text, dealing with Mental Diseases, are the work of Dr. Peterson. The section on nervous diseases constitutes an ideal text-book on the subject and would serve as an excellent introduction to the larger works of Gowers and Mills. It deals systematically and instructively with such subjects as the clinical examination of patients, electric reactions of the muscles and nerves, disturbances of the senses and of speech, diseases of the cerebral meninges and the cranial nerves, and diseases of the spinal meninges and spinal nerves. The various individual diseases of the brain proper and of the bulbo-spinal cord and all the general diseases of the nervous system, with or without known anatomical lesion, are then dealt with in the concluding part of the section. No disease of any importance seems to have been omitted. Here we find graphic descriptions of acromegaly and its allies, Raynaud's disease, intermittent limping, and the various cerebral and spinal palsies of adults and of children. Neurasthenia and hysteria receive adequate attention and so do the other neuroses—epilepsy, migraine, tics, and allied disorders—the chapters concerning these neurotic affections showing noteworthy powers of exposition and a masterly grasp of the subject. Disorders of sleep and hypnotism are briefly touched upon and Dr. Church remarks that "women should never be hypnotised without reliable witnesses." "The public use of hypnotism," adds Dr. Church, "can only appeal to the morbid. In this connexion its power for harm is proven."

Dr. Peterson's contribution on mental diseases deals systematically with the general etiology, general symptomatology, and principles of treatment of mental disease. A valuable critical review, suitable mainly for the mental digestion of the advanced student of psychiatry, from the pen of Dr. Adolf Meyer, director of the Pathological Institute of the New York State Asylums, is intercalated in the text and deals in a masterly and discriminating fashion with recent problems of psychiatry. This is an article of 40 pages in small type reviewing minutely the advances of the past two decades in the higher and more refined departments of investigation—viz., clinical analysis, psychopathology, localisation of functions, the "lines of march" of the various insanities, the correlation of cerebral lesions and morbid processes with psychological disturbances, and the scientific classification of mental disease. The student will find much here to think and to ponder over and much that will, if he appreciates it aright, broaden his horizon and clear his insight into the sphere of mental disease. The different types and varieties of insanity are then dealt with *seriatim* by Dr. Peterson. They include all the common forms, ranging from paranoia and the higher psychoses down to idiocy and imbecility. Many reproductions of photographs and illustrations are added which increase the value of the text. Within the limited space at his disposal Dr. Peterson has achieved a decided success in his exposition of mental diseases. The book can be strongly recommended to the practitioner, the alienist, and the serious student of the nervous system and the mind.

Functional Diagnosis of Kidney Disease. By Dr. LEOPOLD CASPER and Dr. PAUL F. RICHTER. Translated by Dr. R. C. BRYAN and Dr. H. L. SANFORD. London: Rebman, Limited. 1903. Pp. 233. Price 7*s.* net.

THIS book, which was first published in Germany some two years ago, owes its origin to advances in physical chemistry and to the introduction of ureteral catheterisation. The problems which the authors attempt to solve are the following: "How are we to gain an idea of the amount of the total work done by the kidneys and how shall we decide whether this amount of work is sufficient or insufficient for the body? How shall we learn how the work of the kidneys is divided, how shall we definitely decide how much work each kidney does?" The answers to these questions are afforded in a logical manner. It will be seen that these problems are precisely those recently discussed in our columns,[1] where a full description was given of the in-

[1] THE LANCET, March 26th, 1904, p. 859.

strument devised by Dr. Georges Luys for intravesical separation of the urine coming from each kidney. Various modes of examination are discussed before the authors reach the conclusion that "catheterisation of the ureters is the one method which will come nearest to accomplishing our purpose," although they admit that it cannot meet the needs of every case. They do not allow that this practice involves any danger, while as to any difficulty, if a surgeon feels unequal to the task "he must call in someone else who can do it for him." The third chapter, which is the longest, deals with the methods of functional kidney diagnosis and this supplies adequate information of recent researches connected with the elimination of nitrogen, of chlorides, and of artificially introduced substances like methylene blue. In separate sections the combined work of both kidneys and the determination of the work performed by each kidney are duly considered. Notes of 90 cases examined by the authors are appended to illustrate the value of the results attainable by catheterisation of one or both ureters and to indicate the importance of the contention that before undertaking operations upon the kidney it is desirable to estimate accurately the nature of the work performed by each kidney. This fact has long been recognised but the authors have done good service in demonstrating the comparative ease with which this information can be obtained in every case. The book is well printed, and, as a rule, well translated, though in a few places long and involved sentences betray its foreign origin.

The Therapeutics of Mineral Springs and Climate. By I. BURNEY YEO, M.D., F.R.C.P. Lond. London: Cassell and Co. 1904. Pp. 760. Price 12*s.* 6*d.* net.

IN Dr. Yeo's treatise on "Clinical Therapeutics," the revised edition of which has but recently appeared, the practitioner will find a rich storehouse of facts garnered from a long experience; in his work on "Food in Health and Disease" all the questions connected with that subject are fully considered; and now the author in the book under review furnishes the medical profession with a very complete guide to the therapeutics of mineral springs and climates. He has long been an authority on the use and selection of baths and climates in the treatment of disease and some years ago published a work on the subject. The present volume has grown out of the former and enriched with his larger experience it forms a very useful guide to all the chief baths in Europe.

The work is divided into two parts. The first is devoted to the study of mineral springs and the second to the subject of climates. The first part opens with certain general considerations of mineral springs, such as their nature and definition. Dr. Yeo defines a mineral or medicinal water as one which either from its chemical composition or its thermality, or some other quality which experience has proved it to possess, is found useful in the treatment of disease. The composition of these springs generally is then spoken of: salts of lime, of sodium, and of magnesium, iron compounds in small amounts, and silica are most frequently met with; other metals which are less common are detailed, as are also the organic substances and gases. It is pointed out how the thermality of the springs varies, some being extremely hot, whereas others, as the Evian waters, are cold. With regard to the classification of these various springs Dr. Yeo divides them into the following groups: (1) simple or indifferent; (2) common salt; (3) alkaline with its three subclasses of (*a*) simple alkaline, (*b*) alkaline and common salt, and (*c*) alkaline and sodium sulphate; (4) bitter; (5) iron or chalybeate; (6) earthy or calcareous; (7) sulphur, including sodium sulphide, sulphuretted hydrogen, and sulphur and sodium chloride water; and (8) arsenical, containing (*a*) arsenious acid and (*b*) arsenates. The author next describes the modes of application and action of mineral waters in a general sense. Waters may be applied externally or taken internally, both methods being employed in the majority of cases. As regards their general action, it is shown that none of their constituents is absorbed by the skin as was formerly thought. The simple thermal baths merely dilate the skin capillaries and thus promote the cutaneous blood circulation; if, however, the waters contain chemical elements stimulating the skin then additional effects are produced. Ample information of the effects thus excited by the various waters is given, whilst the chapter is completed by an account of the internal action of the waters. In Chapter III. medicated baths, pine-needle baths, peat baths, mud baths, sun baths, electric-light baths, and others are dealt with. The description of the principal medical springs follows and the obviously convenient plan of giving the particulars of the various mineral-water resorts in alphabetical order has been adopted, thus the practitioner can at once find details concerning any spring. In the description of each spring the reader is supplied with the chemical constitution of the water, the names of the maladies most suitable for treatment by it, its "season," and many other details.

We next come to one of the best chapters in the book—viz., the Counter-indications and Indications of Mineral Waters and Baths in the Alleviation and Cure of Disease. As regards the former, *advanced* cardiac diseases, *advanced* arterio-sclerosis, hepatic and renal cirrhosis, and pulmonary tuberculosis are contra-indicated as are all forms of malignant and serious organic visceral disease, all maladies with a disposition to internal hæmorrhage, grave diabetes, aneurysm, true angina pectoris, and grave and recent affections of the central nervous system, together with confirmed cases of paralysis. Certain special contra-indications are also pointed out. The application of mineral springs to the treatment of various maladies is succinctly treated under the various diseases; of special value is the section referring to disease of the circulatory system, the Nauheim treatment being fully set forth.

Part II. refers to the subject of Climate and Climatic Results. The various factors composing a climate are first enumerated. The author divides climates into (*a*) sea or insular; and (*b*) inland or continental. The characteristics of sea and mountain air are then narrated and there follow a full account of the nature of the various seaside resorts in England and Wales, Ireland and Scotland, the continental seaside resorts, the Engadine, the Riviera, and other places. An excellent chapter on winter resorts is given. The work concludes with the consideration of the kind of climatic resorts suited to particular maladies. The treatment of tuberculous affections is critically examined, Dr. Yeo believing in the efficacy of "open-air" treatment at home. A list of the sanatoriums for "open-air" treatment terminates this valuable work.

Drugs: their Production, Preparation, and Properties. By H. WIPPELL GADD, Fellow of the Chemical Society; Member of the Pharmaceutical Society and of the Society of Public Analysts; Lecturer on Pharmacy and Materia Medica to the Royal Albert Memorial College, Exeter. London: Baillière, Tindall, and Cox. 1904. Crown 8vo, pp. xii.–180. Price 5*s.* net.

THE author states that the object of this work is to give a concise account of the principal vegetable, animal, and chemical substances used in medicine. He adds that it has been written principally for students and that it embraces all the drugs included in the Pharmacopœia or mentioned in the syllabus of the qualifying examination of the Pharmaceutical Society. The introduction, which is concerned with

definitions and classification, immediately arrests attention with the statement, "All drugs are poisons." Although at once explained these four words may readily be seized upon and misapplied by those who question the benefit of any system of medicine. A book of this kind stands or falls according to the value of its classification. Mr. Wippell Gadd divides his material into three sections, concerned respectively with vegetable products, animal products, and chemicals. The subdivisions, however, are not so satisfactory. An attempt has been made to deal in turn with the parts employed, as roots, stems, leaves, flowers, and such like. Now this presents obvious difficulties when different parts of the plant are official and sometimes produces confusion—e.g., under the heading of "Hairs, Glands, &c.," we find cotton-wool, kamala, and cowhage, with no indication that the last is not official. The animal products are grouped according to the animals from which they are derived, hence milk-sugar and ox-bile stand together, and thyroid follows wool fat. In the table of contents appears a remarkable line which must be quoted to be appreciated duly: "*Fish Product.* Cod-liver Oil. Musk. Castor. Animal or Curd Soap. Leeches." Under Insects and Insect Products we meet with shellac, while galls appear some pages earlier among plant products. Frequently the student is assisted with the etymology of botanical or technical terms and when Greek is employed the Greek characters are followed by the same word in italics with accents, but unhappily there is lack of consistency, for on p. 25 we find χωλή, *chōlē*, bile, and on p. 95 appears χολή, *cholē*, bile. Salt of tartar, the synonym for potassium carbonate, is derived from *tartarus*, hell, while no explanation is given of tartar emetic, where the sense of the derivation would seem to be more appropriate and convincing. Evidently the author has wearied in the attempt to be instructive, for although he does honour to the French chemist Pelletier and to Dr. Rodie, he leaves "Hanburii" and "Lansdorfii" without any explanation. Under Tragacanth it is amusing to find a quotation from Robert Browning vaunting the excellence of Judæa's gum tragacanth and followed by the author's grave correction that "the gum is, however, collected in Persia." We can commend this book for the entertainment it affords at a moderate price.

LIBRARY TABLE.

The Physiognomy of Mental Diseases and Degeneracy. By JAMES SHAW, M.D. R.U.I. Bristol: John Wright and Co. 1903. Pp. 83. Price 3*s.* net.—This little volume by Dr. Shaw appears opportunely at a time when the subjects of physical deterioration and mental degeneracy are occupying the public mind. The limited nature of the study as regards its restriction to the physiognomy of the insane and of allied degenerates enables the subject material to be compassed within a small scope. Dr. Shaw's experience in public asylums has enabled him to give excellent descriptions, often illustrated with reproductions of photographs, of the physiognomy, gestures and attitudes, and general appearances of patients suffering from the various forms of insanity. The text is not limited to mere description of features and appearances of the insane and of degenerates allied to the insane but includes useful remarks and information on the causation of the characteristic anatomical features and anomalies of structure which are so abundantly present in such individuals. Some interesting reproductions of photographs of the ears, the teeth, and the palate are added, as these organs show frequent variations and abnormalities of development in the class of persons considered. Dr. Shaw's work will serve as a handy unpretentious elementary introduction to the subject of the physiognomy of mental disease and degeneracy.

Ailments of Women and Girls. By FLORENCE STACPOOLE, Lecturer for the National Health Society and for the Councils of Technical Education. Bristol: John Wright and Co. Pp. 238. Prices: boards, 2*s.* net.; cloth, 3*s.* net.—This book is an excellent example of its class. There are many matters concerning their health upon which women are only too often wofully ignorant and many of the illnesses from which they suffer are brought on by neglect of the very simplest precautions. Mothers are especially to blame in this respect and forget that their daughters require careful supervision and instruction in order that they may avoid many of the ailments peculiar to their sex. This little book treats in a simple and straightforward fashion of the various common ailments to which women are liable. The author is to be congratulated upon the clear manner in which she has described these various conditions and upon the excellent common-sense of her recommendations. There are many hints in the book which will be of value to medical men and it is one which we can cordially recommend to those for whom it is intended.

Insanity in Everyday Life. By E. G. YOUNGER, M.D. Brux., M.R.C.P. Lond. London: Baillière, Tindall, and Cox. 1904. Pp. 109. Price 2*s.* 6*d.* net.—This useful little work aims at giving in brief compass the broad outlines of insanity as met with in general practice. The causes of insanity and the early and premonitory symptoms are briefly but clearly dealt with at the outset and the various matters concerning the certification and care of lunatics are referred to. A description is then given of the "types" and the special "forms" of insanity, the classification being based on old and well-worn but useful lines. The descriptions are marked by clearness of expression and due emphasis is laid on points of diagnostic and practical importance. "Borderland" forms of insanity are very briefly referred to, though they form the bulk of cases which pass through the hands of the practitioner before they reach the specialist in psychological medicine. The work certainly succeeds in what it professes to do—viz., in giving a concise, clear, and practical account of insanity and of lunacy law in so far as they concern the general practitioner. It is written in an easy, lucid, and readable style and would be useful also to the medical student attending a first course of lectures and clinical instruction in mental disease.

The Black-Country Nurse: Extracts from the Life of Nurse Sirrah. By LIZZETTEE. Pp. 63. Price 1*s.*—It is a comfort to a reviewer after a course of profound scientific works to come across such a simple and unaffected narrative as that presented in the work now before us. We call it simple but the writer makes great use of a figure similar to the rhetorical figure known as the paraprosdokian. She plunges *in medias res* by informing us that "Nurse Sirrah was when a child rather peculiar." Her name was Eliza and we must reluctantly pass over her early days until she had an offer of marriage, "but having heard such an indifferent account of the gentleman was sorry and was obliged to refuse him and his kind offer." After this she, while living with a dear old Christian lady, attracted a schoolmaster, a curate, a tinplate worker, an edged-tool grinder, and two tailors. However, Miss Sirrah would have none of them and went away to be trained as a nurse. She was trained near the river Mersey, then she went to Queen's Hospital, Birmingham, then to the Suffolk General Hospital, then to a little hospital in the Fens. Here the matron was a "very nice woman matron, ... very neat in her appearance, often being dressed in black silk, ... but unfortunately in a while she became tired of hospital life and left the institution to live with her daughter. They kept a ladies' school just for amusement." Nurse Sirrah eventually found herself at Poplar Hospital where

the house surgeon "was a good and such a nice man. Miss C., Sirrah and all the rest were in love with him. But the callous young dog went one day and monopolised the heart of one of the visiting doctor's daughters. But he asked all the nurses for a likeness and gave them one of his own; and then went and got married." We are pleased to be able to state that the nurses, far from resenting this heartless conduct, "bought him a flower-stand from Mappin and Webb's, a silver stand with silver feet, and a glass bowl for the flowers. Sirrah and others filled it with choice flowers and presented it to the doctor who was very pleased with his wedding present." Nurse Sirrah seems to have been a passionate young woman, for when the new house surgeon was appointed, he was a nice-looking, dark-complexioned man, she "fell in love with him—so that was all right; she was well suited for a lover—in the house and another out of the house—a barber." Such goings on as these deservedly came to a bad end. The barber "used to furnish her with scent and hair improvers, and bear's grease, and scented pomade, and tooth powder, until she had all her teeth out and then he gave her up."[1] The house surgeon, however, "stuck to his attentions, found her medicine and a set of teeth, a walking stick, and an umbrella, and then left to marry the late house surgeon's wife's sister." After this double reverse Nurse Sirrah left Poplar and went to St. Thomas's Hospital where with many regrets we must leave her. Every nurse and every house surgeon should read this work. We have rarely come across any book which gives such a vivid picture of hospital life, not even Mr. Hall Caine's "The Christian." we cannot forbear from quoting the following dramatic episode as a finish: "So the assistant house surgeon became betrothed to the sister nurse of the children's ward. They married on pain of dismissal. Then the lady superintendent asked the head house surgeon to become betrothed to her. But the doctor replied, expressing his inability to compete, saying his engagements were so many and some so urgent that he could not possibly grasp such an enormous link to unite in matrimony, particularly with one who was a widow and herself a lady of rank."

Analytical Records

FROM

THE LANCET LABORATORY.

(1) HEMISINE PREPARATIONS, "TABLOID," "SOLOID," AND "ENULE"; (2) "ENULE" QUASSIN, "ENULE" SOAP COMPOUND; AND (3) "TABLOID" VERONAL.

(BURROUGHS, WELLCOME, AND CO., SNOW-HILL BUILDINGS, HOLBORN, LONDON, E.C.)

1. Hemisine represents the active principle of the medulla of the suprarenal gland. The action of this principle, as is well known, is powerfully hæmostatic and it has been employed internally in hæmatemesis, hæmoptysis, and in cerebral hæmorrhage. It is suggested that hemisine is of greater therapeutic value than either digitalis or strychnine. The "tabloid" hemisine is suitable for internal administration and the "soloid" is useful for external application, the ophthalmic tabloid for ocular use, and the enule of hemisine for application in the rectum. It may be added that hemisine is used in the form of a spray in the treatment of hay fever and in inflamed conditions of the throat and nose. 2. Recent additions to the list of rectal suppositories known as the "enule" brand are "enule" quassin employed as an anthelmintic for the ascaris lumbricoides and "enule" soap compound containing equal parts of curd soap and dried sulphate of sodium, a combination that is useful for the relief of constipation. 3. Veronal is a hypnotic of comparatively recent introduction and already some favourable reports have been made in regard to its use. Its therapeutic action appears to be similar to that of trional but with more satisfactory results. Veronal is a synthetic compound which is chemically described as diethyl-malonyl-urea. Tabloids of veronal are made containing 0·5 gramme and 1 gramme respectively of the drug.

[1] Cf. Pes, Samivellus; De quadam in hortum ingrediente ad brassicae folium secandum.

SCOTCH WHISKY.

(HENRY SIMPSON AND CO., GLASGOW, AND 6, CROSBY-SQUARE, LONDON, E.C.)

This spirit is characterised by a somewhat dark colour and the impression which it gives on tasting is that of a well-matured whisky. On analysis the following results were obtained: extractives, 0·15 per cent.; mineral matter, *nil*; alcohol, by weight 40·05 per cent., by volume 47·40 per cent., equal to proof spirit 83·07 per cent.; volatile acidity calculated as acetic acid, 0·024 per cent.; and fixed acidity calculated as tartaric acid, 0·015 per cent. As regards secondary products the following were the results given in grammes per 100 litres of absolute alcohol present: acidity calculated as acetic acid, 50·88; aldehyde, 17·65; furfural, 3·23; ethers calculated as ethyl acetate, 57·83; and higher alcohols, 212·70. The total secondary products are thus 342·29. According to these figures the spirit presents the composition of pure malt whisky. The taste is soft and mellow and there is an entire absence of harsh qualities.

DUTCH RUSKS.

(AGENCY: L. TERWINDT, LIMITED, 76, QUEEN-STREET, LONDON, E.C.)

The rusk is both palatable and nutritious and has the further advantage of being sterilised, since the heat required to cook a rusk is calculated to destroy micro-organisms. The specimens of Dutch rusks which we examined are excellent, the texture is uniform, and while crisp they are not hard. According to the appearance under the microscope the rusk is thoroughly cooked. No less than one-fifth part of the rusk is soluble in cold water and much of the starch is converted into dextrin. These rusks afford an excellent substitute for toast, though perhaps a trifle sweet.

(1) VITOFER PREPARATIONS; (2) INFANT'S MILK FOOD; AND (3) YEAST TABLETS AND POWDER.

(J. STAUFFER AND CO., ENGHEIM, BELGIUM. AGENTS: MATTHAEI AND CO., CULLUM-STREET, LONDON, E.C.)

1. "Vitofer" occurs in brilliant reddish-brown scales which are readily soluble in water, yielding a red solution exhibiting the properties of hæmoglobin. Coagulation occurs when the solution is heated to 70° C. The solution shows the characteristic spectrum of hæmoglobin. According to our analysis vitofer contains 0·6 per cent. of iron in organic association. The moisture amounted to 6·7 per cent. and the total mineral matter to 2·20 per cent. This preparation mixed with chocolate forms vitofer chocolates which afford a convenient way of administering the hæmatinic. In the same way vitofer is added to a farinaceous milk food. This food, however, according to our analysis, is deficient in fat, the total amount being only 3·30 per cent. Vitofer is prepared from fresh bullock's blood previously deprived of fibrin and fatty matters. It exhibits hæmoglobin in a convenient way and should be of service in conditions of enfeebled nutrition or in which the blood is impoverished. 2. Stauffer's infant's milk food is stated to be prepared from fresh milk and to exhibit a composition identical with that of human milk. We cannot reconcile these statements with the results of our analysis. To begin with, the food is deficient in fat and

besides contains starch and more than half its weight of cane sugar. The total proteids amounted to 14·46 per cent. and the mineral matter to 1·50 per cent. 3. The yeast tablets and powder gave satisfactory evidence of activity. These preparations are intended for internal administration for the treatment of carbuncle and anthrax. Yeast has also been used as a remedy for constipation. These yeast preparations, on account of their purity, are well adapted for medical use.

LIME JUICE AND LIME JUICE CORDIAL.

(L. ROSE AND CO., LIMITED, LEITH; AND 29, WORSHIP-STREET, LONDON, E.C.)

The lime juice gave the following results on analysis: total solid matter, 8·46 per cent.; mineral matter, 0·40 per cent.; and acidity calculated as citric acid, 7·76 per cent. The preparation was free from salicylic acid but contained sulphurous acid. The cordial gave the following results on analysis: total solid matter, 34·24 per cent.; mineral matter, 0·14 per cent.; sugar, 10·00 per cent.; and acidity calculated as citric acid, 2·94 per cent. The cordial contained both salicylic acid and sulphurous acid for preserving purposes. We have little doubt that both the juice and the cordial are made from the choicest materials procurable and that being so it seems to be a pity that they cannot be preserved without the use of chemical agents.

(1) HÆMABOLOIDS; AND (2) FORMOLYPTOL.

(PALISADE MANUFACTURING CO., NEW YORK; AND ANDRUS AND ANDRUS, 46, HOLBORN VIADUCT, LONDON, E.C.)

1. "Hæmaboloid" is a liquid preparation which is described as "the combination of the various iron-bearing nucleo-albumins of the vegetable kingdom reinforced by bone marrow extract and beef peptones antiseptically treated with nuclein." It is said to possess considerable therapeutic value in all anæmic conditions and a good deal of clinical evidence is quoted by the makers in support of this view. According to our analysis the preparation contains a considerable amount of iron in an organic form, associated, in fact, with nucleins and phosphorus and peptones. The liquid preparation contains 8·71 per cent. of solid matter, of which 0·6 per cent. consists of iron calculated as ferric oxide. We have also examined a preparation of hæmaboloids containing arsenic and strychnine, the presence of both of which we were able to confirm. 2. Formolyptol is a pleasant and fragrant antiseptic fluid which may be used both internally and externally. It contains glycerine, borax, and formaldehyde, besides the pleasant aromatic and antiseptic bodies pinus pumilio, eucalyptus, myrrh, storax, and benzoin. The preparation is colourless and is a very agreeable form of antiseptic for toilet use as well as for medical and surgical purposes.

ARDATH CABINET CIGARS MINIMUM NICOTINUM.

(THE ARDATH TOBACCO CO., 44, WORSHIP-STREET, FINSBURY, LONDON, E.C.)

We entirely approve of the method under which it is stated the "ardath" cigar is manufactured. The objectionable practice of finishing off the end of a cigar by licking it is strongly discountenanced by these manufacturers according to their statements. The operatives in the factories of this company are compelled, so it is affirmed, to finish the shaping of the cigar by means of a knife only. The selection of the leaf is aimed at producing a "mild" cigar and on trial these cigars proved to be "mild smoking" whilst yielding a pleasant aromatic smoke. We found also that the amount of nicotine does not exceed 2 per cent., which is considerably below that frequently found in Havana cigars.

SCANDINAVIAN STOUT.

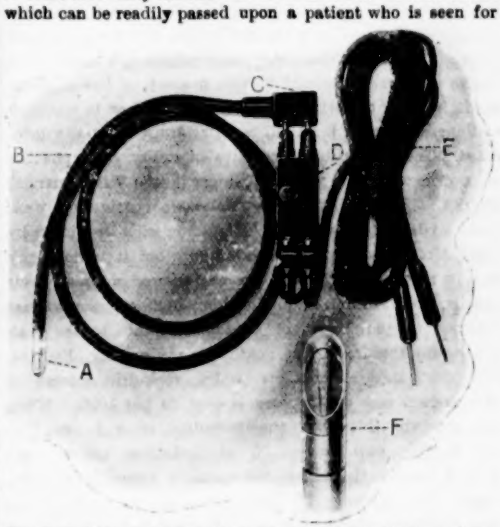
(AGENT: F. BAGGER, 3 AND 4, GREAT WINCHESTER-STREET, LONDON, E.C.)

This malt liquor gave on analysis the following results: extractives, 8·81 per cent.; mineral matter, 0·38 per cent.; alcohol, by weight 4·62 per cent., by volume 5·78 per cent., equal to proof spirit 10·13 per cent.; volatile acidity reckoned as acetic acid, 0·036 per cent.; and fixed acidity calculated as tartaric acid, 0·25 per cent. This is a good nourishing stout, with an excellent flavour due to malt and hops. The stout was in sound condition, practically free from acidity and from excess of gas. The alcoholic strength is comparatively low, while the nourishing malt extractives are high. These results indicate that the stout is well adapted for invalids' use.

New Inventions.

A NEW GASTRO-DIAPHANE.

As a rapid means of diagnosing dilatation of the stomach and differentiating it from gastroptosis it is probable that the gastro-diaphane would be found of the greatest service in daily practice if it were not so difficult to use. The chief reason for this is the clumsy way in which it is constructed and its comparatively great diameter, the instrument of Einhorn measuring 39 Charrière and having a rigid end of over two inches. It is obviously impossible in most cases to use such an instrument except upon patients who have been accustomed to the passage of the tube. Unfortunately in these it is not necessary as the diagnosis will have been made by other means. It appears to me that if the diaphane is ever to come into daily routine use we must have an instrument which can be readily passed upon a patient who is seen for



the first time and who has not previously had a tube introduced into his stomach. It is with the hope of providing such a form of apparatus that I have had the diaphane figured above constructed by Messrs. Lemmon and Co., 19, Hanover-square. It consists essentially of a cystoscope lamp (A), carried on the end of a stomach tube (B) of the same diameter (21 Charrière), connected by means of a switch (D) with the connecting cords (E). At (C) we see the plug connexions between the tube and the switch. The apparatus is so arranged that when the switch is in a position pointing towards the left shoulder of the patient and parallel to it the window of the lamp is directly forwards and in proper position to illuminate the stomach. At (F) the actual size of the lamp and tube is shown. The light emitted appears to be quite equal to that given by the older form of apparatus.

Harley-street, W. GEORGE HERSCHELL, M.D. Lond.

THE LANCET.

LONDON: SATURDAY, MAY 14, 1904.

Miners' Phthisis in the Transvaal.

IN the pages of a morning contemporary Mr. HALDANE, M.P., has recently remarked that there are certain important problems which the Government of the Transvaal must make an effort to solve, and that while in regard to some of these there may be considerable difference of opinion, one question alone is urgent and that is miners' phthisis or silicosis. It was in the pages of THE LANCET[1] that the subject of miners' phthisis among the gold miners of the Transvaal was in this country, if not in others, first considered from the medical standpoint in an article by Dr. THOMAS OLIVER of Newcastle-on-Tyne. Since the publication of that article several important steps have been taken. Of these one calling for notice is the appointment of the Commission by Lord MILNER more than 18 months ago to inquire into the causes of the malady and to report as to how the disease might be prevented. It is common knowledge that at the close of, and during, the South African war many miners who had worked in the Transvaal returned to this country, a few of them to die in Northumberland and a larger number to succumb to their malady in Cornwall, as Dr. JOHN HALDANE indicated. There is still an excessive mortality from phthisis among the white and coloured miners in the Witwatersrand district. The loss of life is deplorable considering what could be done to prevent it. The Commission appointed by Lord MILNER did its work admirably but it is necessary that its recommendations should be followed up in all their details. Mr. HALDANE, quoting from figures presented last summer to the House of Commons, points to the high death-rate that exists in South African mining districts. The death-rate among the white rock-drill miners of the average age of 35 years is over 70 per 1000. When we compare this with the mortality of 6·3 per 1000 of English coal miners, 6 of ironstone miners, and 8·1 of English tin miners the question naturally suggests itself: Can nothing be done, and at once, to reduce the enormous waste of human life that is taking place in the Transvaal? According to the returns made by Mr. TREVELYAN it would appear as if the mortality among the native rock-drill miners was less than among the white—viz., 42·03 per 1000 as against 70, but the average age of the men is not given. The natives do not work continuously and many of them leave the immediate district and return to their kraals where they die. For these reasons the statistics of the two classes of miners are not comparable. Men who are on the spot and who have studied the question say that the mortality among the native rock-drill miners is excessively high. No astonishment need be expressed at this since it is the "boys" who are largely employed in the dusty processes in the mines.

[1] THE LANCET, June 14th, 1902, p. 1677.

Can anything be done to remedy a condition of things that is calling for immediate attention? The Transvaal Medical Society has recommended that "dry mining should, as far as possible, be converted into wet mining" and the Commissioners have also suggested that jets and sprays of water would, in combination with good ventilation, prove an efficient preventive against dust. Unfortunately, the water-supply of Johannesburg is often rather short but this is not an insurmountable difficulty. One danger may follow in the wake of the introduction of water into mines unless the greatest care is taken and that is ankylostomiasis, as recent experience in Westphalia has shown. Miners' phthisis in South Africa and its prevention can only be adequately dealt with by the Government calling to its aid skilled medical and mining advice of which there must be plenty in the Transvaal. There are men on the spot who are surely capable of dealing with the problems.

Opinions are divided in this country as to the cause of the shortage of native labour on the Rand. It has been stated, for example, that mine-owners have not exercised sufficient care to prevent ill-treatment and sickness. Mr. STANFORD, assistant chief magistrate at Umtata, says that while certain misrepresentations have been made as regards wrongful deductions from the wages of the native miners there is not the least doubt that the wages paid at present are less than they were before the war. The natives are not obliged to work; their wants are few and they have plenty of food; as they are therefore not satisfied with the wages offered they prefer to remain at home rather than to run the risks attendant upon working in the mines. The subject deserves more than passing attention, especially at the present time, when there is the prospect of the introduction of Chinese labour into the Rand. South African natives can leave the mines at any time if they are discontented but the men imported from China must fulfil the three years' engagement. If it is true, as Dr. FRAZER stated to the Commission, that every miner who has worked a year or two on rock drills is affected in his lungs it is surely desirable that the utmost should be done to reduce to a minimum, to annihilate if possible, those harmful influences in the mines, such as dust and imperfect ventilation, to the operation of which can be traced directly or indirectly the fibrotic changes in the lungs of miners exposed to them and the sequel of which is too frequently phthisis.

The Sociological Society.

IT would be difficult to withhold some degree of sympathy from the endeavour now being made by certain philosophers and amateurs to establish a "Sociological Society," although when we consider the fate of the National Association for the Promotion of Social Science, which was founded in 1857 and which, after a short independent existence and a period of combination with the Society for Promoting the Amendment of the Law, may be said to have fallen to pieces from the incoherence of the elements of which it was compounded, it is difficult to feel any assured conviction either of the usefulness or of the longevity of the new institution. Social reformers may, as a rule, be roughly divided into two classes—those who are far in advance of the time in which

they live and whose suggestions will be realised, if at all, only by subsequent generations, and those who are from the first visionary and unpractical. If memory does not deceive us the meetings of the deceased association were largely occupied in listening to counsels of perfection not destined to be realised in this imperfect world, and hence, although the reforms proposed were usually of a kind which could only be carried into effect by the aid of legislation, most prudent legislators were accustomed to look askance at them. There were, of course, some which involved no special legal requirements; and we have a distinct recollection of one much-applauded paper in which it was suggested as a remedy for most of the domestic evils afflicting the working classes that their girl children should be taught, even from infancy, to modulate their voices to dulcet harmonies, in order that it might be practically impossible for them, when adult age was reached, to excite the anger of brutal husbands by shrill-toned scolding or vituperation. Not only was the soft answer to turn away marital wrath; but its very softness was to be enhanced and emphasised by the music of the voice in which it was delivered. The nature of the precise steps by which the indicated reform was to be brought into operation was not, so far as we recollect, very clearly indicated by the author.

Among the leading spirits of the new movement a prominent place is held by that accomplished statistician and student of heredity Mr. FRANCIS GALTON, F.R.S., and we have been favoured with a preliminary proof of a paper on "Eugenics," its definition, scope, and aims, which he is to read before the new society on Monday next. The definition is necessary because—although Mr. GALTON is not using the word for the first time and although his invention and earlier use of it has secured for it a place in the English language, so far as that distinction can be afforded by the great Oxford Dictionary—it still can hardly be said to convey, as a matter of etymology, all that its author or inventor seeks to place upon its shoulders. Mr. GALTON does not realise with sufficient clearness that the prefix "*Eu*," even if we follow him in regarding it as the equivalent of "*good*," leaves the definition of good entirely doubtful; nor does he seem to be aware that the kindred compound, "*Eugenesis*," found its way into biological jargon many years ago as a coinage intended to denote mere fertility of parents without any reference to the quality of the offspring. In the latter sense the old Poor-law, under which every labourer was encouraged to marry early, and was paid an increased allowance from the rates on the birth of each successive infant, was probably the greatest and most effective promoter of eugenesis that the world has witnessed, but we greatly doubt whether Mr. GALTON would desire to restore it as an aid to the cultivation of eugenics. We have no wish to quarrel with a word, but if COBBETT had any justification for his famous requirement that an English sentence should be as clear as a pebbled brook, we may surely urge as an essential condition that the words of which the sentence is composed should convey the same ideas to all who see or hear them, and should be in no need of tedious interpretation either by footnotes or in the text. The "science of eugenics," we are told, "deals with all influences that improve the inborn qualities of a race; also with those that develop them to the utmost advantage." If we accept the common definition of "science" and employ the word to mean methodically arranged or digested knowledge, we must humbly express a doubt whether any science of eugenics is at present in existence or whether there is any probability of its being constituted at an early date. All that has so far been presented to us is a series of suggestions that this and that obscure problem might perhaps be solved if a proper amount of care and study were bestowed upon the collection and marshalling of facts calculated to lead to the solution. In the later portions of his paper, from which we hesitate to quote because what we have received is a proof open to revision, Mr. GALTON escapes from the generalities of the commencement and describes it as the aim of "eugenics" to make the more useful classes of the community contribute more than their rateable proportion to the next generation. In other words, he looks to the new or projected science as an agency which will promote the physical and intellectual development of the human race. We say human race advisedly, because it is inconceivable that the "more useful classes," whichever they may be, could be improved in any sensible manner except by means which to some extent would reach and influence the less useful classes also.

So far as our own outlook extends we can only discover one department of science by which the human race is in the least likely to be improved in the manner indicated, and that department is physiology, applied in the first place to nutrition and in the second place to education. We want physiologists to tell us how the young human organism should be reared and fed in order to develop to the utmost the latent possibilities of each individual, and to tell us also how the cells of the immature brain may be guided towards effective growth in this or that direction. Neither of these problems can be insoluble, but no definite attempt at solving either of them has so far fallen under our observation. Mr. GALTON refers to his favourite subject of heredity, but we doubt whether studies of real or apparent hereditary influence will be helpful in the present state of knowledge, or we should perhaps say of ignorance, about the essential conditions of physical or of intellectual activity. We do not gather figs from thistles, and it is obvious to common observation that offspring seldom rise greatly above the level of their parents. But, on the other hand, we see such wide dissimilarities between the offspring of the same parents that we must fall back upon vague conjectures about atavism before we can find any words which appear to offer an explanation of the familiar facts. Even twins, while sometimes marvellously alike, are in other instances markedly different from each other in formation, in character, and in capacity. The feeding of the children of the nation is at present regulated partly by tradition supposed to be based upon experience and partly by the interested falsehoods of the common advertiser. The education of the same children is regulated by the ideas of the preacher, the schoolmaster, and the county councillor. We greatly fear that the new society is likely to fall into the hands of men who will talk grave nonsense about what they call "psychology" and who will neither know nor seek to know anything of the growth or the recuperation of

brain tissue. The time has surely come when the problems of immature existence should be boldly grappled with by the physiologist, and when the discoveries of the physiologist should be prepared for public assimilation by the physician.

Horrors without Foundation.

THE recovery of the ill-fated submarine A 1 a fortnight ago, the coroners' inquest upon her gallant officers and crew, and the payment of the last honours to their remains revived the national sorrow as well as the grief of those mourning for relatives lost in her. But the pain now felt should be less terrible than the uncertainty and fear which must have beset them owing to rumours which before were current as to the possibility of those on board having died a lingering and painful death. These questions have been set at rest—men and officers died at their posts and if they could make no struggle to save themselves were at least spared the agony of making it in vain, but we are entitled to ask what justification there was for the horrible surmises which appeared in the daily press. The most detailed and circumstantial form which the rumours referred to assumed was to be found in the columns of the *Daily News* of April 11th and it is against the needless publication of horrors of this kind without the closest examination as to their truth and the most careful sifting of the facts alleged that we protest on behalf of the public at large and on behalf of those more intimately connected with the dead. The matter to which we refer filled about half a column of the newspaper. It was headed, "Truth about A 1," and the same line formed a conspicuous item in the contents bill. The story told was based upon an alleged examination of the interior of the submerged boat by the divers and was to the effect that of 11 men and officers one was missing. The details were complete, even the name of the missing man was given, with the suggestion that he had been released through a torpedo-tube in order to endeavour to accelerate the rescue of his comrades confined still alive in the submarine. A well-known diver employed was named as the authority for this statement and also for one to the effect that a message written on a sheet of paper torn from a note-book had been left by the crew, but, it was added, the contents had not yet been made known. Other details included a story that the submarine had been raised and towed to Bembridge Ledge off the Isle of Wight, presumably as a preliminary to the ultimate removal to the dock which, as everybody knew, was to be its ultimate destination. Below this tale came two notes, the one relating to the rough weather which had rendered all progress impossible and the other recording a denial by Sir JOHN FISHER of the report that the vessel had been raised to the surface and the bodies examined. This denial was qualified as "official" and to the whole was appended an editorial note "We have been unable to communicate with our correspondent whose statement we give with reserve.—Ed. D.N." To what extent the expression "with reserve" applies to a story headed "Truth About A 1" we leave to our readers to decide, only adding that it was followed in conspicuous type at the head of the column by the lines "Terrible Spectacle," "Doomed Crew's Message," "One Body Missing"; "From our own Correspondent, Portsmouth." The mental picture of suffering and death suggested by these words and by the account to which they called attention we need not dwell upon. The story was one which in the interest of the living relatives of the dead, as well as of the wider public which sympathises so deeply with them, might well have been suppressed even had it been true in every particular.

The recording of horrors wholly or in part without foundation is, however, not a rare occurrence in the cheaper newspapers which no doubt find that their readers like something which will "make their flesh creep." It is, however, discreditable to the newspaper when it occurs and it is a practice which adds to the bulk of demoralising literature daily laid before the classes least fitted by education and temperament to withstand its subtle influences. Tales of death and of crime are not wholesome reading for the weak-nerved and morbid minded and if it is necessary that some publicity should be afforded to them it is highly undesirable that fictitious additions should be allowed to increase the attraction which they present to depraved intelligences. As an instance may be cited a story told in the *Star* of Dec. 31st, 1903, headed "Murder?" "Woman gagged and killed off Tottenham Court-road." A young woman had been found dead in her bedroom with her throat cut, and difficulty afterwards arose in determining whether she had been murdered or had committed suicide with the aid of a piece of glass. The account given in the issue of the *Star* referred to began with the words, "Thus far all that can be stated with certainty is this," and after other points had been touched upon went on to say, "The police were eventually called in only to find the woman's nude body lying on the bed with her throat cut in the most terrible fashion. She had been gagged and blindfolded and her hands bound together across her breast." From the evidence at the inquest it appeared that the woman's throat was cut, but that when the police broke in only her head and shoulders were uncovered. Her nudity, her gagged, blindfolded, and bound condition, all the "horrible details" in short, had no foundation in fact; a statement that she had been robbed and that her valuables were missing was also apparently untrue. With the suicide or the accidental death, however, which figures in the newspapers as a "Mysterious Crime" until the sworn evidence at the inquest throws the light of truth upon it we are all familiar. Unfortunately the "mysterious crime" is a more exciting and attractive topic for the morbid-minded section of the public than the death of the mentally deranged by his own hands or the tragic result of a commonplace mishap. The anxiety which at times is felt with regard to public personages and the issue of public events affords an opportunity for the circulation of many untrue stories and at the same time adds to the distressing effect which these may produce. The horror excited by a statement published in the *Daily Mail* as to the fate of those who were known to be undergoing siege in the embassies at Peking will be recalled as an instance of "news" of this class. The present war between Russia and Japan has afforded, and will continue to afford, abundant opportunity for the publication of the horrifying but wholly or partly untrue reports of disaster and massacre,

an opportunity which we venture to hope will be used as sparingly as possible in this country.

The complete elimination of untruth and inaccuracy from all matter published is, of course, impossible. News has to be brought out promptly if it is to remain news at all. When, however, it relates to topics which if true can only shock and distress, when a suspicion of improbability attaches to it and all external circumstance and trustworthy evidence which might even indirectly corroborate are absent, it may surely be omitted without the newspaper losing its name for enterprise and general attractiveness. The value of a reputation for honourable reticence and for purveying that which can be relied upon as true is also a matter for the consideration of those interested in a journal's material prosperity.

The Office of Coroner.

A PARAGRAPH in our New York correspondent's letter on p. 1314 of THE LANCET of May 7th announced that after a struggle lasting many years the medical profession of New York city has succeeded in getting a Bill through the State Legislature to abolish the office of coroner. It may seem to some a little anomalous that there should exist in so democratic a community an office associated with obsolete functions of extreme antiquity and deriving its name from services rendered directly to the Crown, but the title of coroner has long been dissociated from the duty of recording the "placita coronæ" or "pleas of the Crown" and of watching those sources of Crown revenue which might arise out of the punishment of crime. In days when *felo de se* and other felonies produced forfeiture of goods and when an accidental death might result in the chattel which caused it being handed over to the Crown or to the Crown's grantee as a "deodand," the "crowner" was a knight of high standing in his county and the proper performance of his duties was a matter of direct interest to his sovereign. In New York, however, as in England, the main duty of the modern coroner has been to hold inquiries of one description only and of a kind which makes it highly desirable in the public interest that they should be intrusted to medical men. There are no doubt many differences between the coroner in New York and the synonymous judicial officer on this side of the Atlantic. Our correspondent's letter showed this where it informed us that the change which he announced had been delayed because "the four coroners of the city have hitherto been a power in politics that defeated year after year the united efforts of all our medical organisations," a condition which those familiar only with British political methods and with the position occupied by British officials may find difficult to grasp. The innovation, however, which our correspondent briefly described showed that the efficient investigation of the cause of death in all cases has been the object sought by the medical profession in New York and that is the end to which criticism of the coroner's functions has always been addressed in THE LANCET ever since the late THOMAS WAKLEY first applied himself to the subject and personally filled the office in question. In New York the Health Department is to institute a "Bureau of Medical Examiners," presided over by a pathologist and composed of medical men, with the duty of determining the cause of death. The district attorney is to take charge of the case when an element of crime enters into it, and the existing coroners during the residue of their terms of office are to preside at inquests as before. The organisation of the new system in detail and its practical working should be watched with interest in the country which originated and developed the system thus superseded. Deaths are not inquired into by coroners in Scotland, but in England and in Ireland, under different Acts of Parliament and in various circumstances, this important duty is intrusted to the coroner in a limited number of cases. He is not expected and is not empowered to afford to the public more than a moderate degree of protection. His inquests do not even cover all the ground left vacant by the absence of the medical attendant's death certificate. He has power to hold them only "where he is informed that the dead body of a person is lying within his jurisdiction and there is reasonable cause to suspect that such person has died either a violent or an unnatural death, or has died a sudden death of which the cause is unknown, or that such person has died in prison," or where an inquest is required under any Act of Parliament. In order that he may be able to determine whether an inquest should be held or not subject to the limitations thus imposed, as well as in order that he may conduct it efficiently, it is clearly of the utmost importance that the coroner should be a medical man, and of recent years, particularly in large towns, medical men as a rule have been chosen for these appointments, but even thus it cannot be said that the cause of death is established as certainly or as universally as it should be in a highly civilised community such as ours. It will be interesting to observe the nature and extent of the change effected in New York by the "Bureau of Medical Examiners" of the State Health Department. No doubt the bureau will enter upon an extremely difficult task but its experiment, even if not at first completely successful, will afford a valuable guide to others.

Annotations.

"Ne quid nimis."

METROPOLITAN STREET AMBULANCE ASSOCIATION.

THE general purposes committee of the London County Council received on May 9th at the offices of the London County Council, Spring-gardens, a deputation from the Metropolitan Street Ambulance Association. The deputation comprised amongst its number Mr. Reginald Harrison, the President of the association, Sir William S. Church, President of the Royal College of Physicians of London, Sir Alfred Cooper, Vice-President of the Royal College of Surgeons of England, Sir Thomas Barlow, Mr. A. A. Bowlby, Mr. Raymond Johnson, Dr. H. D. Rolleston, Mr. C. S. Wallace, Dr. R. Dudfield, and Dr. Arthur W. James, the honorary secretary, who originated the association. With the deputation there were also Lieutenant-Colonel Sir R. Temple and Colonel Sir H. C. Perrott, representing the St. John Ambulance Association. This influential deputation was introduced by Sir William J. Collins to Mr. Thomas McKinnon Wood, the chairman of the general purposes committee of the London County Council. Mr. Harrison, as

president of the association, stated briefly the reasons why the deputation approached the London County Council in the hope of inducing that authority to graft upon the Fire Brigade an efficient ambulance service. Sir William Church, who next spoke, drew especial attention to the great saving of cost that would ensue if the advantageous method of combining the Fire Brigade and ambulance services was adopted. It was stated that the Poplar Hospital was estimated to receive four cases of accident or sudden illness every hour day and night throughout the year. The representatives of the St. John Ambulance Association also stated how anxious their association was to help the proposed plan in every way. A large portion of the time was occupied in answering the many questions asked by the members of the general purposes committee; these were mostly responded to by Dr. James who explained that the proposed ambulance service would not put more work on the Fire Brigade as at present constituted. It was estimated that every year 15,000 casualties had to be removed to hospitals and the association suggested that a sufficient number of men, horses, and ambulances should be added to the Fire Brigade to deal efficiently with the task. It would appear that out of the 90 fire stations only 30 would have to be furnished with ambulances. Dealing with the question as to whether calls for ambulances would not interfere with the alarms for fire Dr. James explained how such calls nowadays were carried out by means of telephones and in this way no inconvenience would arise as might possibly have been the case if the old plan of simply using a bell were still in use. Some confusion seemed to exist as to what should be expected from the police but Dr. James was able to clear up the difficulty entirely by pointing out that the police would help in the ambulance service in exactly the same way as they helped in cases of fire. The council has appointed a subcommittee to consider the question.

THE INQUEST UPON MRS. PIERCY.

A SAD occurrence which took place at the West London Hospital recently has been made the subject, consequent on the publicity of the proceedings before the coroner, of some unjust reflections upon the institution in question. We need not enter into the details of the story as they have been brought to the attention of all the medical profession, but the gist is as follows. A patient was operated upon for a ruptured Fallopian tube in circumstances of great hurry, the need for the hurry being her absolutely desperate condition. The operation proved only partially successful and a recurrence of symptoms led to the re-opening of the abdomen. It was then discovered that a small pair of forceps had been left in the abdomen after the first operation. The patient died and the coroner's jury, having heard the evidence of the surgeon who performed the first operation, of his house surgeon who assisted him, and of the nursing sister in charge of the theatre, brought in the following verdict: "Death from misadventure due to peritonitis following an operation, accelerated by the presence of the forceps," adding as a rider, "we consider the system at the hospital is largely at fault and suggest that in future all instruments should be numbered and counted before and after each operation." The operating surgeon, a man of many years' experience, was able to bring unimpeachable testimony to his scrupulous care as an operator, while the possibility of such a deplorable oversight occurring despite rigorous precaution was also proved. The jury quite appreciated these points, but they evidently considered that at the West London Hospital the procedure in regard to such operations was not attended with due care. The evidence of the theatre sister was to the effect that the sponges were counted as a matter of routine both before and after the operation but that the instruments were only counted before the operation, and this statement puzzled them, as, indeed, it puzzled us. An examination, however, of all the circumstances puts the matter in a much more favourable light for the hospital. We have now received statements from the two nursing sisters who have been in charge practically of the operating theatre at the West London Hospital for the last six years and it is clear that the "system" which has been blamed does not exist. The independent statements of these two sisters show that there is no defect in the system of checking instruments at the hospital, although, to the profound regret of everyone concerned, the routine at the West London Hospital—the counting and checking which prevail, of course, everywhere else—was not observed on this occasion. Each sister says that upon taking charge of the operating theatre she was enjoined to count the instruments, sponges, and swabs before and after every operation and to hold herself responsible for having done so. On the lamentable occasion in question the nursing sister, following instructions, detected that a sponge was missing and it was found in the abdomen, but it does not seem to have occurred to anyone concerned that an instrument might also be concealed in a similar manner. A reason for this oversight has been communicated to us by the senior surgeon of the hospital who writes:—

> Changes in methods occur in a progressive art like surgery and the following most important change must be remembered. Whereas years ago it was the custom to stop hæmorrhage inside the abdomen by applying small artery forceps to numerous points and afterwards tying those points one by one, many surgeons have almost entirely discarded this plan. I do not think that I myself have put out of sight a single small pair of forceps in the last 300 abdominal operations performed by me. I remember well the preoccupation of mind it caused me on the last occasion when I did such a thing. So it happens that while within the last few months I have on various occasions reminded the sister about counting swabs placed in the abdomen, I have never had to ask her about counting the instruments. As no instruments were put out of sight, it was unnecessary to do so. Some, if not all, of my colleagues have, I know, acted much in the same way. Thus, the house surgeon, the sister, and all concerned have had constantly held up before their eyes the importance of counting the sponges, while actual recent experience has tended to minimise the ancient and necessary rule that instruments should be counted too.

We think that the view taken by the senior surgeon is almost certainly right, and confirmation is given to it by the fact that the present theatre sister, for whose care and conscientiousness we are in a position to vouch, had only returned to the position after an absence from work in the operating theatre of over six years. If we further bear in mind that this unfortunate oversight took place in connexion with a case of acute hæmorrhage of the most dangerous description, and if we appreciate that the operations of surgery must sometimes be done under conditions of emergency and haste which resemble those found in the operations of war, it will be recognised by every fair-minded person that even the most careful surgeon, aided by the most scrupulous assistants, is liable to be visited by a similar calamity. Just as it is impossible to make any delicate mechanical contrivance absolutely "fool-proof," so it is impossible to invent any system of counting instruments and sponges which will entirely do away with human fallibility. We have the deepest sympathy with the husband of the unfortunate woman, and are in no way attempting to lessen the catastrophe when we say that it is quite likely that the overlooked forceps had nothing to do with her death.

DISTRIBUTION OF PLAGUE.

LORD MILNER in a telegram received at the Colonial Office on May 2nd states that since April 23rd 14 fresh cases of plague have been notified in the Transvaal, 11 being in coloured persons and 3 in white persons. Out of the suspected cases 32 have been found to be not suffering from plague, making the total number of suspected

and proved cases to be 142—viz., coloured persons 123 and whites 19. Since April 23rd 5 deaths have been reported, all being of coloured persons. For the week ending May 7th the total number of fresh cases reported since April 30th is 11, 6 being white persons and 5 coloured; 19 cases have been found not to be plague, making the present total of suspected and proved cases 134, 22 whites and 112 coloured. The number of deaths for the week is 4, 1 of a white and 3 of coloured patients. In Cape Colony for the week ending April 16th only 1 case of plague was reported—namely, a coloured male at Port Elizabeth. Plague-infected rodents were also found in the town. As regards the Mauritius a telegram from the Acting Governor received at the Colonial Office on May 6th states that for the week ending May 5th there was 1 case of plague which proved fatal.

DOES SYPHONAGE OCCUR IN THE LARGE INTESTINE?

A LIVELY controversy has been going on lately in our columns as to the way in which the colon propels its contents into the rectum preparatory to their evacuation. Dr. R. W. Leftwich is an advocate of a novel view, for he seeks to explain this action of the colon on purely hydrostatic principles. He considers that hydrostatic pressure is brought to bear on the large bowel by the small intestine at the ileo-cæcal orifice and that the colon, in man at all events, acts after the manner of a syphon of which the descending colon and its continuation form the longer limb. In a small volume in which he has published the results of his speculations and experiments Dr. Leftwich advocates the avoidance of the recumbent position in strictures of the colon, points out that the proper position after the administration of an enema is the erect one, conjectures that intussusceptions are the results of cæcal vacua, and states that in typhoid fever the patient should be made to sit up, during the first ten days at all events, for stated intervals. He certainly has the courage of his opinions. His opponent, Dr. A. Keith, has with persistence asserted that this view of the purely hydrostatic action of the colon in emptying itself is erroneous. Dr. Keith's chief reasons for dissenting from the theories of Dr. Leftwich are the known consistence of the contents which is not such as to favour syphonage; the impossibility under normal conditions of maintaining a rigid and at the same time freely pervious colon; the great development of the muscular coats of this part of the bowel; and, lastly, the actual demonstration of peristaltic movements in it. Dr. Leftwich, on the other hand, doubts the power of the human colon to propel its contents against gravity and infers that the rigidity of the tube is sufficiently provided for by tonic contraction of its longitudinal bands and the support yielded by the doubling in of the ridges between the saccules. He holds that the failure of saline purges if the patient retires to bed after taking them, the occurrence of morning diarrhœa in some conditions, and the normal morning evacuation all support his contention of syphonage as the active agent in causing the onward passage of the contents of the colon. We think that Dr. Keith has advanced cogent reasons for doubting the presence of such a mechanism as that which Dr. Leftwich invokes and our scepticism is strengthened when we turn to a description of the mechanism as given by Dr. Leftwich in his own book, for at one stage he postulates the following condition of affairs: an inverted rigid U-tube (the colon) with a vacuum at the cæcal end and a fæcal column suspended between the cæcum and the rectum, the end which lies in the descending column in some mysterious way supporting the end which lies in the ascending colon. Since the publication of Dr. Keith's last letter we have received a further communication from Dr. Leftwich in which he still maintains his original position. The discussion is of use in that it draws attention to the possible normal condition of the colon during life. This portion of the bowel is probably in a condition of slight tonic rigidity and in its empty state has practically no lumen. Considerable lengths of the colon may occasionally be seen in a firmly contracted condition during abdominal operations on man and a similar appearance is not infrequently met with after death, especially in the descending, iliac and pelvic sections of the bowel. This is quite comparable with the condition held to obtain in the living empty stomach. We cannot see, however, that any advantage will accrue by further discussion of the matter in our columns.

HENRY MORTON STANLEY.

BY the death of Sir Henry Morton Stanley, which occurred on May 10th from pleurisy and pneumonia, the country has lost a typical British explorer. Born in very humble surroundings in Denbighshire, he raised himself, partly by his own innate talent and partly owing to the kindness of a merchant named Stanley whose name he adopted, to a position on the staff of the *New York Herald*. The chief incident in his career of interest to our own profession was that he was the discoverer of Livingstone who had for years disappeared within the heart of what was then literally "the Dark Continent." The historic meeting between Livingstone and Stanley took place at Ujiji in 1871. Two years afterwards Livingstone died alone except for the presence of one faithful servant at Ilala and his body being brought home Stanley was one of the pall-bearers when it was laid to rest in Westminster Abbey. In 1874 Stanley again left England for Africa to undertake an exploring expedition under the auspices of the *Daily Telegraph* and the *New York Herald* and explored a great deal of the Congo territory. Of the foundation of the Independent State and the expedition for the relief of Emin Pasha we have no space to give details, but it may justly be said that Stanley's explorations put the coping-stone to the building raised with such toil and indomitable energy by Denham, Barth, Burton, Speke, Grant, and Baker, to mention only a few of those who have devoted their lives to solving the problems of Africa.

THE WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

THE twenty-second anniversary dinner of the West London Medico-Chirurgical Society was held on May 4th at the Empire Hall of the Trocadéro Restaurant, Piccadilly-circus, London, W., Dr. Seymour Taylor, the president, being in the chair. After the usual loyal toasts had been honoured Colonel T. H. Hendley, I.M.S., in responding to the toast of "The Imperial Forces," which was proposed by Mr. C. R. B. Keetley, referred to the serious misgivings caused by the determination of the authorities to omit from the Army Council the head of the Army Medical Service. If the Medical Service of the army was expected to show successful results in war there should be full preparation in time of peace and that could only be secured by continuity of administration and by full representation. The Indian Medical Service had no official representation on the supreme or provincial legislative councils. However, the good sense and courtesy of lieutenant-governors and other officials minimised this want of representation in the Indian Medical Service. Few realised perhaps in how many ways the men in the Indian Medical Service were in touch with the history and daily work of the empire. Boughton and Hamilton were among the founders of the Indian Empire and Holwell, the hero of the Black Hole of Calcutta, was for a time Acting Governor of Bengal. Continuing, Colonel Hendley pointed out that two officers who had recently served under him

were now on special service, one Colonel L. A. Waddell, I.M.S., medical officer and antiquary with the expedition in Tibet, and the other, Major R. Bird, I.M.S., in Cabul on a mission to the Ameer. Colonel Hendley concluded an interesting speech by affirming that such variety of work and responsibility demanded unusually wide powers of control and representation. Mr. H. Percy Dunn and Mr. W. McAdam Eccles were each presented with a silver bowl for the services which they had rendered in editing the journal of the society. The toast of "The Kindred Societies and Guests" was intrusted to Mr. Stephen Paget and was replied to by Dr. F. de Havilland Hall and Dr. C. Theodore Williams. Mr. F. Swinford Edwards proposed "The President and the Society" which was acknowledged by Dr. Seymour Taylor. In the course of the evening those present were entertained with songs and recitations by Dr. J. Blumfeld and Mr. Walter Ivimey, assisted by others.

STUDYING FOR THE BAR.

MEDICAL men desirous of becoming qualified as barristers-at-law not infrequently apply to us in quest of information as to the proper course to take. Omitting details, the following is a rough outline of the necessary procedure. Three important conditions have to be complied with—namely, (1) the student must join one of the Inns of Court; (2) a certain number of terms must be kept; and (3) certain examinations must be passed. Finally, certain fees amounting to about £150 must be paid. There are four Inns of Court, the Inner Temple, the Middle Temple, Lincoln's Inn, and Gray's Inn, but it matters little to the non-practising barrister which he joins. Before joining an inn, the student must produce evidence of education sufficient to satisfy the Council of Legal Education. This is easily done by means of a certificate obtained from the inn which he proposes to join, showing that he has passed a public examination at one of the universities, such as Responsions at Oxford, the "Little-go" at Cambridge, the matriculation examination of the University of London, or such other examinations of like nature as may be approved by the Council. Those who are unable to produce evidence of the first two requirements may pass an entrance examination instituted by the Council. Having satisfied himself as to his eligibility the student should obtain a form of application for admission to his proposed inn, not omitting to send a guinea at the same time. This application when returned must be accompanied by two separate certificates of respectability and general fitness for membership of an inn signed by barristers of at least five years' standing. With regard to fees on admission, it is usual at all the inns for the student to pay a deposit of £50 towards his commons, the balance over (at the time of call) going towards his call fees. At certain inns caution money to the extent of £100 is required from non-university men. The other entrance fees at all inns amount to about £40. This sum includes £25 for Government stamp and a sum of £5 5*s.* to admit to all law lectures. With regard to the keeping of terms 12 terms spread over three years are required. In order to keep a term six dinners (three for members of any university in Great Britain and Ireland) must be attended. The subjects of the examination are (*a*) Roman law; (*b*) constitutional law and legal history; (*c*) the law of evidence and procedure and criminal law; and (*d*) the law of real and personal property, the law of contracts and torts and the principles of equity. Parts (*a*), (*b*), and (*c*) can be taken separately and at any of the four annual examinations after joining an inn but (*d*) cannot be taken until eight terms have been kept, when the three other divisions can be taken with it if so desired. Those who have already passed certain examinations in Roman law can claim exemption from (*a*), but no other subject is excused by reason of the results of examinations passed elsewhere. The standard required for a pass has been considerably raised during the last few years; therefore steady reading on the part of the candidate is necessitated. Those who have the leisure should attend the lectures, delivered by the readers and assistant readers, which deal with the special subjects forming the basis of the examination questions. It should be noted that those who obtain a first class in division (*d*), generally known as the final examination, can be called in their tenth term. Lastly, the fees payable before call amount to about £100, which sum includes £50 for a Government stamp, dues for 12 terms' dinners, and an amount which compounds for all future dues. Those of our readers who desire more particulars can obtain all the necessary information from the treasurer's office at any of the Inns of Court.

MENINGITIS IN TYPHOID FEVER.

THE modern method of lumbar puncture enables meningitis to be diagnosed under conditions in which this was formerly impossible and reveals its existence in mild forms in many infectious diseases. We have recently called attention to this fact in the case of mumps.[1] At the meeting of the Société Médicale des Hôpitaux of Paris on April 15th M. Ch. Achard and M. G. Paisseau showed that the same holds true in typhoid fever and other infections. The views held with regard to meningitis in infectious diseases have passed through several phases. For a long time cases presenting meningeal symptoms were scarcely considered instances of meningitis if they were not fatal and were termed by French writers "*méningisme*." Then it was shown that by lumbar puncture recovery was possible in meningitis and even in suppurative meningitis. Later, cytoscopy showed the existence of slight meningitis with purely histological lesions in cases formerly termed "*méningisme*." At the same time it was found that "histological meningitis" might exist without any meningeal symptoms. M. Achard and M. Paisseau reported the following case. A lad, aged 18 years, entered hospital on Oct. 23rd, 1903, complaining of severe headache and backache which had obliged him to leave work. He was in good health until the beginning of October, when he began to suffer from malaise, lassitude, and want of appetite. For some days before admission he had had headache and repeated rigors. Nevertheless, he worked until the day before admission. On the 24th there was rigidity of the neck with limitation of flexion and rotation of the head, which were painful. Kernig's sign was well marked. During the previous night there had been delirium. The patient was constipated and several times vomited glairy matter. There was a little albumin in the urine and the diazo reaction was distinct. The temperature was 103·1° F. in the morning and 104·3° in the evening. Lumbar puncture yielded clear fluid which was found on centrifugalisation to contain an abundance of lymphocytes. Culture media were inoculated with negative result. The puncture was followed by marked relief of the meningeal symptoms. On the 26th rose spots appeared on the abdomen and Widal's reaction was obtained. On the 27th puncture of the spleen was performed and yielded cultures of the typhoid bacillus. On the following days the temperature was lower and Kernig's sign and the rigidity of the neck disappeared and convalescence followed. In this case the meningeal symptoms were sufficiently marked to establish a strong presumption of meningitis. When the symptoms are ill marked a similar "meningeal lymphocytic reaction" may be obtained. The fact that the fluid was sterile shows that the meningitis was due to the action of toxins. In the same way cases

[1] THE LANCET, May 7th, 1904, p. 1297.

occur in which there are meningeal symptoms without the cerebro-spinal fluid showing any signs of meningeal reaction. The explanation of such cases is that the symptoms of meningitis are "borrowed"—i.e., are not due to the meningeal lesion but to vascular or inflammatory troubles of the subjacent nervous tissue. Hence it is conceivable that the nervous elements may be altered without the serous membrane being inflamed. Further, another explanation is possible: the meningitis may be limited to the cerebral membranes and cause no change in the fluid extracted by lumbar puncture. Several examples of this have been published. At the same meeting of the Society M. Netter read an important paper on a similar subject. Since 1898 he has systematically looked for Kernig's sign and found it one of the easiest and most certain means of recognising meningeal irritation. He has frequently found it in two diseases—typhoid fever and pneumonia. Out of 313 cases of typhoid fever he found it in 44. Some of these cases showed other signs of meningitis—rigidity of the neck and trunk, pains in the head and limbs, contractures, convulsions, and paralysis of limbs. Cases of typhoid fever in which Kernig's sign occurs are unusually serious. M. Netter has found that the mortality and the liability to relapses are about thrice as great as in cases in which the sign is absent. When Kernig's sign is present the nature of the fluid obtained by lumbar puncture varies as described above. On several occasions M. Netter has isolated microbes from fluid obtained by lumbar puncture in typhoid fever, not always the typhoid bacillus, but sometimes the pneumococcus, the staphylococcus, and the streptococcus. Even if the fluid is apparently normal meningitis is not negatived.

THE RUSSIAN MEDICAL COUNCIL.

THE Russian Medical Council was confirmed by Imperial Decree on March 22nd last in its premier position as the highest medico-scientific institution in the empire in the matter of advising as to questions affecting the public health, medical practice, and medico-legal inquiries. The new charter is composed of 23 articles which, *inter alia*, charge the Council with the preparation of the Pharmacopœia, taxing and classifying medicines and regulating their sale, and controlling the preparation and sale of new medicines and the importation of such from abroad; its duties will also include the censorship of medical works. The Council will deal with medical practice in Russia by holders of foreign diplomas, certain categories of whom will only be admitted to practise after the customary examination in the Imperial Military Medical Academy or in one of the universities, resulting in the granting of a degree; others of a certain reputation may be admitted after an oral examination before the Council; and, finally, those who may have made a name in the professional world by their works or by the occupation of professors' chairs, or the like may be accepted without any examination at all by a simple decree of the Council confirmed by the Minister of the Interior. Article IX. proyides that the Council shall consist of a president holding the degree of a doctor of medicine, *ex-officio* members and consultative members, and a professional secretary. The *ex-officio* members are the Chief Medical Inspector of Public Health, the Chief Military Medical Inspector, the Chief Medical Inspector of the Fleet, two Court Medical Inspectors, a Director of the Imperial Institute of Experimental Medicine, a president of one of the departments of the Orthodox Religion, the Ministers of Finance, Public Education, Agriculture and Government Property, Justice, Public Highways, and Foreign Affairs; the chief of the Commercial Navigation and Ports Department, the President of the Veterinary Committee and the Chief of the Veterinary Executive, all to be appointed by decree of the Senate. Consultative members are to be chosen from scientific circles by a two-thirds majority of a minimum of half the total membership.

INVALID CHILDREN'S AID ASSOCIATION.

A CONFERENCE has been arranged by the Invalid Children's Aid Association, to be held by the kind permission of the Lord Mayor at the Guildhall on June 7th and 8th, the object of which is to bring into communication those working in aid of crippled and invalid children, to make known the various needs of this class and the agencies available for supplying them, and to consider the education of crippled and invalid children and the means of fitting them for future occupation and independence. The relation of this work to the Poor-law and to charity organisation will also be discussed, as well as the possibility of preventive measures. The Lord Mayor will preside at the opening meeting and at the four sessions of the conference the chair will be taken by the Earl of Aberdeen, Sir William Broadbent, the Duchess of Sutherland, and Lord Stanley of Alderley respectively. It is hoped that the social, economic, and ethical importance of the subjects to be discussed will render the conference both attractive and useful and that there will be a large attendance of active workers and of those interested in its objects. Programmes, tickets, and other information can be obtained from the Secretary, Invalid Children's Aid Association, 8, Henrietta-street, Covent-garden, London, W.C.

CHONDRODYSTROPHIA FŒTALIS.

AN important paper dealing with this comparatively rare affection, which has often hitherto been mistaken for rickets and miscalled "fœtal rickets," is published by Dr. P. W. Nathan of New York in the *American Journal of the Medical Sciences* for April. Most children affected with chondrodystrophia fœtalis are either born prematurely or born dead at full term. The affection is therefore a serious disease with a high mortality. Those infants who are born alive, says Dr. Nathan, are usually very weak and for some time life is precarious. In 1836 Busch gave a very accurate description of a case which he then called "congenital rickets," noting all the salient features—viz., the very large head with prognathous jaws and flattened nose, the short and deformed limbs, the large epiphyses of the long bones, the "rosary" on the ribs, the deformed pelvis, and general obesity. Müller (1860) showed that this was really a disease of the fœtal cartilage preceding the period of bone formation and that it had nothing in connexion with rickets. The most important advance in our knowledge of chondrodystrophia fœtalis was due to Kaufmann (1892) who, having had the opportunity of studying 13 cases, was enabled to clear up many points in its pathology. Dr. Nathan's observations were made on five cases of chondrodystrophia fœtalis and the following results were ascertained. The head was very large and appeared disproportionate in contrast to the defective length of the fœtus as a whole. Its circumference was from 18 to 20½ inches. The arms were short and did not reach the waist-line and the legs were so short and bent that the middle point of the body instead of coinciding with the navel was nearer to the ensiform cartilage. The epiphyses of the long bones were enlarged and the ribs were beaded in "rosary" fashion. The skin and subcutaneous tissues were hypertrophied, causing an exaggeration of the natural folds of the skin. The abdomen was prominent and the fœtus as a whole was very obese. Finally, there was epicanthus, the lips, tongue, and eyelids were thickened, the tongue protruded from the mouth, and there were decided prognathism

and flattening of the entire nasal region—a group of conditions which simulated closely the features of congenital cretinism. Dr. Nathan found characteristic disturbances of development of the body of the sphenoid, the basilar part of the occipital, the ethmoid, and the nasal bones which caused the peculiarities of cranial and facial physiognomy of chondrodystrophia fœtalis. The long bones showed a peculiar affection of the growing cartilage in every case—viz., increased vascularity, a more or less complete arrest of the normal formation of rows of cartilage cells which precede the deposit of osseous tissue proper in a growing bone, and a softening of the cartilage almost to a gelatinous condition favouring deformity. Illustrative photographs are reproduced of Dr. Nathan's cases and he adds, "the hair on the head is abundant, fine and soft, not brittle." The legs are shortened out of all proportion to the trunk, unlike cretinism, where both are shortened. The mental faculties are always intact, the gait is steady and not peculiar, and the patient learns to walk and to talk like other children. As the patient gets older the obesity disappears. Chondrodystrophia fœtalis is also different, says Dr. Nathan, from the Mongolian type of idiocy. Finally, no lesions or changes of the thyroid gland have been found in this affection, whereas it is atrophied or defective in cretinism. The three conditions—chondrodystrophia fœtalis, congenital cretinism, and congenital rickets—are entirely different from one another.

THE BEHAVIOUR OF ENTERIC FEVER IN PRUSSIA.

THE council of the Epidemiological Society is to be congratulated cordially upon its recent departure in inviting distinguished epidemiologists from other countries to read papers at its meetings. We published in the columns of THE LANCET of April 23rd the full text of a paper read before that society by Dr. Reincke, the able medical officer of health of Hamburg, upon the behaviour of enteric fever and cholera in that great commercial city, and we are glad to hear that the society is this week entertaining Dr. Moritz Pistor of the Ministry of the Interior of the Kingdom of Prussia at its annual dinner. Dr. Pistor is reading a paper before the society to-night (Friday) at 11, Chandos-street, Cavendish-square, W., the subject of the paper being the Prevalence of Enteric Fever in Prussia during the Decade 1892 1901. Some of our epidemiologists are somewhat prone to take a rather insular view of certain infectious diseases and to generalise too widely upon the limited experience of this country. It is only by a careful study of the behaviour of communicable diseases under varying social and climatic conditions that the real etiology of such diseases can be elucidated and it is much to be hoped that the Epidemiological Society will continue its efforts in the direction of international epidemiology. The Transactions of the society contain contributions from most parts of the empire and from many parts of the world, yet it is but rarely that these papers have been delivered by the authors in person.

THE SUNSHINE OF ENGLAND AND SWITZERLAND COMPARED.

IT is very doubtful whether the amount of bright sunshine actually recorded in Switzerland and the southern counties of this country has ever previously been compared and the following figures cannot be considered otherwise than extremely striking. They demonstrate clearly that although on some parts of our south-west coast there has been less sunshine than during an average April and that in other places the month was not exceptionally bright, the most favoured portion of this country was so superior to one of the most favoured spots of the continent that it had from 35 to 80 hours more sunshine at a period of the year when the direct rays of the sun have such an incalculable influence upon the public health. There are unfortunately no averages available with which to compare the Swiss values but it is an undeniable fact that the weather in that country during the past month was not at all of a rainy or unsettled description. Even London, which is noted above all places for its lack of bright sunshine, was brighter than most of the Swiss resorts and had 32 more hours than Basle. Only the statistics for the south-west, south, and south-east of this country are given in the appended table, but at other localities further north, where the hours of sunshine have been less numerous, they exceeded those in Switzerland. At Aberdeen, for instance, there were 157 and at Llandudno and also at Nottingham 162 hours of sunshine. It is probably nothing but an unusual coincidence that the stations with the least altitude had both the greatest and the least sunshine. Lugano had 158 and Basle only 106 hours of sunshine.

April Sunshine in the South of England and in Switzerland

Stations.	No. of hours.	Difference from average.	Stations, with altitude.	No. of hours.
Aberystwyth.	179	?	Geneva (405 metres)	133
Scilly Islands.	183	+ 4	Lausanne (553 ,,)	137
Plymouth.	154	- 18	Montreux (553 ,,)	126
Jersey.	165	- 29	Berne (572 ,,)	131
Torquay.	180	*nil*	Basle (278 ,,)	106
Bournemouth.	160	?	Zürich (493 ,,)	138
Hastings.	170	- 4	Santis (2500 ,,)	113
Margate.	156	+ 4	Davos (1560 ,,)	144
Bath.	145	?	Lugano (275 ,,)	158
London (Westminster).	138	+ 28	—	—

THE WORKING OF THE MIDWIVES ACT.

AN interesting report on the action taken in carrying out the provisions of the Midwives Act has been presented to the Midwives Act committee of the Lancashire County Council by its medical officer, Mr. E. Sergeant. In February last the committee determined that a short advertisement should be inserted in 56 of the newspapers circulating within the county to the effect that "every person desirous of practising in the administrative county of Lancaster as a midwife must forthwith send in her name to the medical officer, Preston." Up to April 6th applications to be placed on the register have been received from 354 persons residing in the county districts. Of these 96 held certificates of examining institutions recognised by the Central Midwives Board and 305 claimed to be placed on the roll as having been in *bonâ-fide* practice as midwives for at least one year previously to July 31st, 1902; in addition 96 who had applied in mistake were referred to their own authorities. A list of applicants is furnished by Mr. Sergeant showing the number from each of the county districts and also the number of midwives practising at the present time in these districts as shown by the lists supplied by the medical officers. An examination of this return shows that while the lists of the medical officers contain some 1069 names only the small proportion of 378 of these up to the time the report was furnished—viz., April 6th—had applied for registration. Possibly many of the women will apply before April 1st, 1905, after which date they will no longer be able to call themselves midwives according to the provisions of the Act. No doubt many from ignorance of the requirements of the new Act or from carelessness will fail to avail themselves of the privilege of having their names

enrolled on the register as having been in practice as midwives, and we foresee that the local authorities will have a good deal of trouble in dealing with these women when the limit of time expires. Mr. Sergeant's report is of interest as showing the relatively small number of midwives in the county of Lancaster who have so far responded to the invitation of the county council to enrol themselves.

INDIAN MEDICAL SERVICE DINNER.

THE annual dinner of the Indian Medical Service will be held at the Café Monico, Piccadilly-circus, on Thursday, June 9th, at 7.45 P.M., when Surgeon-General Sir Colvin Colvin-Smith, K.C.B., will preside. Officers intending to be present should communicate with the honorary secretary, Lieutenant-Colonel P. J. Freyer, 46, Harley-street, London, W.

THE SPOROZOA IN RELATION TO DISEASE IN MAN AND ANIMALS.

IN the seventh lecture on the sporozoa, delivered by Professor E. A. Minchin at University College, London, on May 2nd,[1] the group of sporozoa known as the microsporidia was dealt with. The microsporidia constitute an order separate from the myxosporidia. They are characterised by being cell parasites living within cells or in the interstices of solid tissues but they are never found free in the visceral cavities as is the case with some of the forms mentioned in previous lectures. The trophic stage is in some marked by a large spore-producing form of body, in others by extreme minuteness. The spores produced are in every case of very minute size, sometimes being almost invisible. In specially stained specimens a single polar capsule can be seen. These little spores, in the form of minute oval bodies, are met with in insects and occasionally in fishes but they do not occur in warm-blooded vertebrates. In this respect they differ from the sarcosporidia which are parasitic on the higher warm-blooded animals. In the angler-fish and the stickleback tumours of round or ovoid form are occasionally seen in the tail, fins, and ocular region, while in the flounder cysts are produced in the gall-bladder, the cause of these tumours or cysts being the presence of a species of microsporidium in the tissues. Some of the microsporidia are parasitic on the silkworm and prove to be very deadly. The ordinary "silkworm disease" is due to a form (microsporidium or glygea bombycis) which infests the caterpillar and the mulberry trees on which it feeds. Professor Thélohan of Paris has shown that crayfish in France are liable to infection by species of microsporidia which grow within the muscles in such numbers as to cause death and extermination of the crayfish in several rivers. The life cycle of the microsporidia comprises a stage of partial budding like the torula of yeast (partial schizogony or merogony) and the sporulation stage which follows this. Each spore divides itself repeatedly until eight oval-shaped daughter spores result, each of which is provided with a long stinging thread. The microsporidium which occurs in the stickleback is a large parasite with many nuclei. It undergoes a peculiar form of sporulation, ending with the formation of minute sickle-shaped spores. The more important microsporidia, so far as concern the higher animals or human industries, are glygea bombycis (the disease of the silkworm) and the thelohania which affects the crayfish. The sarcosporidia are another group of sporozoa which has been as yet little studied. They occur in warm-blooded animals, such as the pig, sheep, mouse, and occasionally man. They occur rarely in cold-blooded animals. They were first discovered in the mouse by Miescher. The parasite dwells within the muscular fibre of the animal. The life cycle includes a multinuclear phase comparable to that of glygea bombycis and a stage of spore formation in which numerous sickle-shaped young spores are produced. Mice infected by feeding with the spores of sarcosporidia exhibit symptoms of illness only after a long incubation period during which the parasite probably undergoes a series of trophic changes before it becomes an active spore producer. Laveran and Mesnil also found microsporidial parasites in the sheep. A form identical with that in the sheep occasionally infects man. It is probable, concludes Professor Minchin, that further research will show that the sarcosporidia are important agencies in the production in the human subject of disease—i.e., disease hitherto unsuspected to be due to such agencies and but little investigated.

[1] References to the previous lectures will be found in THE LANCET of March 12th, p. 736, and 26th, p. 889, April 2nd, p. 950, and 9th, p. 1009, and May 7th, p. 1298.

"DR." BELL AND THE POST-OFFICE.

FOR about the two-hundredth time we have received one of "Dr." Bell's filthy little pamphlets which has been forwarded to us by a correspondent who is anxious to know if the circulation of such literature cannot be stopped. We have more than once applied to the police authorities who say that they can do nothing, but on May 5th a man named George William Burgess was summoned before Sir Horatio Davies at the Mansion House police-court for sending certain objectionable prints through the post. The Alderman said that he should not be doing his duty if he did not do his best to put a stop to a business of this kind and Mr. Burgess was fined £10. Now, if one man can be summoned and fined for sending objectionable prints through the post there is no reason why another should not be punished likewise, and we should like to ask the police authorities and the Postmaster-General why they continue to allow the man who calls himself "Bell" to send his filthy literature through the post. We may remind our readers that on Jan. 28th, 1896, "Bell," whose name was then "Henry Walters," was fined £20 and six guineas costs for using the titles "M.D." and "Dr." without being a duly qualified medical man. He still continues to call himself "Doctor," he still sends his dirty little pamphlets broadcast, and he still gives testimonials purporting to come from medical men whose names, however, do not appear on the Medical Register.

THE ACTION OF MINERAL WATERS.

THERE is among medical men a lack of unanimity as to the way in which the beneficial results obtained in certain cases by the use of mineral waters are brought about. Some attach importance to the exact composition of the water and regard subtle differences in the proportions of the various salts contained in it as of the greatest consequence, while others incline to the view that it is the quantity taken rather than the quality of the fluid which matters and suggest that what is chiefly accountable for the progress made by those undergoing a "cure" at some health resort is the alteration involved in the mode of life of the patient or the habit of temperance which he is constrained to adopt. Light is perhaps thrown upon the subject by a communication made to the Académie des Sciences at Paris by M. F. Garrigou at the sitting of April 25th. He has observed that certain mineral waters contain organic matter in two forms—a crystalloid and a colloid. The heavy metals present are associated with the colloidal substances, which latter constitute what he describes as "*ozydases naturelles*." Those patients whose tissues have lost their oxidising power as the result of debilitating infectious disease and anæmia derive benefit from the employment of a water containing traces of the heavy metals with their accompanying colloids—e.g., the waters at Eaux-Bonnes—since these oxidise the nitrogen

which the tissues are unable to cope with and cause a great increase in the amounts of urea and uric acid excreted. This explanation, of course, will only cover a few of the numerous varieties of water used medicinally but it may afford some hint as to the *modus operandi* of the large groups of saline and alkaline waters the use of which has become so widespread.

MALARIA IN EGYPT.

IN the notice of Lord Cromer's report on Egypt which we published in THE LANCET of April 30th, p. 1228, want of space precluded reference to his remarks under the heading "Fever at Ismailia." "I wish to draw public attention," he says, "to the very remarkable hygienic results which have been obtained at Ismailia by the application of Major Ross's plan for the destruction of mosquitoes." The town of Ismailia was founded in 1862 and until 1877 the public health remained satisfactory. Various works were then undertaken in the neighbourhood, one of the effects of which was a considerable increase in the area of stagnant water. Malaria then showed itself and before long the disease became endemic. During the 14 years from 1884 to 1897 the yearly average number of cases was 1700 out of a population of about 8400, of whom about 1800 were Europeans. Large sums were spent with the intention of improving the sanitary condition of the town not only by the Suez Canal Company but also by the Egyptian Government, "still no impression was made on the fever." The yearly average number of cases during the five years from 1898 to 1902 was 1800. The President of the Canal Company then invited Major Ross to visit Ismailia and to report on the situation and on Dec. 27th, 1902, it was decided to give effect to his recommendations. To show the results Lord Cromer supplies the following table:—

Number of Cases of Malarial Fever at Ismailia.

—	1902.	1903.
January	162	13
February	100	20
March	101	16
April	621	14
May	133	9
June	154	15
July	120	23
August	130	18
September	176	25
October	159	39
November	176	12
December	73	9
Total	2105	213

Words could add little to the eloquence of these figures and yet, as Lord Cromer points out, the facts are even more remarkable than would at first sight appear. Out of the 213 cases which occurred in 1903 no fewer than 203 were relapses. The number of fresh cases during the twelvemonth was consequently only ten. "There is," says Lord Cromer in conclusion, "one point in connexion with this branch of the subject which is worthy of note. Expert authorities are agreed in holding that mosquitoes do not range far from the place where they are bred. It would therefore appear possible for a few neighbours to coöperate together and free their special locality from this insect pest. The experiment is now being tried in the quarter of Cairo in which I reside. In order to encourage other residents in Egypt to follow the example of my neighbours and myself I may mention that I am informed that it has become possible to dispense with mosquito curtains at Ismailia."

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE next general or quarterly meeting of this association will take place, under the presidency of Dr. Ernest W. White, on Wednesday next, May 18th, at 4 P.M., at the Langham Hotel, Portland-place, London, W. The following papers will be read: Quantitative and Qualitative Leucocyte Observations in Various Forms of Insanity, by Dr. Lewis C. Bruce, physician-superintendent, and Dr. A. S. M. Peebles, assistant physician, Perth District Asylum, Murthly; a Statistical Note on the Social Causes of Alcoholism, by Dr. W. C. Sullivan: the Psychology of Hallucinations, with diagrammatic illustrations, by Dr. W. H. B. Stoddart; and Notes of a Case of Combined Spinal Degeneration with Unusual Mental Symptoms, with microscopical sections of the cord, by Dr. J. Kennedy Will. The members will afterwards dine together at 6.30 P.M. at the Café Monico, Regent-street, W. Further information can be obtained from Dr. Robert Jones, the honorary general secretary, 11, Chandos-street, Cavendish-square, London, W.

THE annual dinner of the British Balneological and Climatological Society will take place on May 18th at the Criterion Restaurant, Piccadilly, London, W., at 7.30 P.M. After the dinner there will be a smoking concert by invitation of the President. Further information may be obtained from the secretaries, Dr. Septimus P. Sunderland, 11, Cavendish-place, London, W., or Mr. H. Shirley Jones, "Ravenstone," St. Andrew's-road, Droitwich.

THE Right Hon. C. Scott Dickson, K.C., M.P., Lord Advocate for Scotland, will preside at the dinner of the Glasgow University Club, London, to be held on Friday, June 3rd, at the Café Royal, Regent-street, London, W. Applications for tickets should be made to the honorary secretaries, 63, Harley-street, W.

Mr. George Herring, who during the past five years has contributed £53,000 to the Metropolitan Hospital Sunday Fund, has again offered to give either £10,000 to the Fund or to add one-fourth of the amount collected in places of worship on June 12th, limiting this to a collection not exceeding £100,000.

THE oration of the Medical Society of London will be delivered by Sir Isambard Owen on May 16th at 8.45 P.M. in the rooms of the society, 11, Chandos-street, W. The subject is the Future of Medical Education in London.

THE death is announced on May 1st at Leipsic of Wilhelm His, the eminent professor of anatomy in the university of that city. We shall publish an extended account of his career in a future issue.

NEXT January the University of Kharkoff will celebrate its hundredth anniversary with an exhibition of documents and various objects of interest connected with the life of the institution.

THE Harveian Oration will be delivered on Tuesday, June 21st, by Dr. Richard Caton, at the Royal College of Physicians of London, Pall Mall East, at 4 P.M.

Sir George Hare Philipson, M.D. Cantab., M.D. Durh., D.C.L., LL.D., has been elected president of the Newcastle Royal Infirmary.

THE Moscow Physico-Medical Society will in the month of October this year celebrate its hundredth year of existence.

THE ANTIVIVISECTIONISTS AND THE "JUNGLE THEORY OF MORALS."

THE antivivisectionists issue "a humane monthly journal" which they entitle the *Animals' Guardian*. Humanity in this case seems to consist in seeking to prevent the progress of such scientific research as is most likely to lead to the discovery of the cause of disease and the best means for its cure or prevention. Nor does this paper display any greater concern for the available scientific methods of saving the life and health of the animals of which it has most fallaciously entitled itself the guardian. Persons really desirous of acting as the guardians of animal life would naturally devote themselves to the study of the very elaborate scientific researches made for the prevention of cattle plague and other epizootics. From all parts of the world calls have been made on such men as Professor Koch or the eminent bacteriologists of the Pasteur Institute. For anthrax among the sheep in Australia, for cattle disease in South Africa, and for cattle plague to-day in Egypt eminent men of science have gone to study on the spot these devastating epizootics. With the aid of the knowledge acquired by vivisection they have produced antitoxins that have saved millions of animals. A journal professing to be "the animals' guardian" should be teeming with information in regard to these researches. All its eloquence should be devoted to extolling the virtues and the achievements of those who, with the aid of vivisection, have done so much to save the lives of men and animals. As the paper is illustrated we might expect to find in it the portraits of Koch, of Pasteur, of Claude Bernard, of Lister, and of the many other eminent men whose scientific researches have so largely contributed to reduce the sufferings of both man and beast.

This is not, however, the antivivisectionist's conception of "a humane monthly." For illustration he prefers the head of a savage tiger which picture he dedicates, by a special inscription printed underneath, to the Society for the Advancement of Medicine by Research. Then marked copies of this particular number have been sent to persons known to uphold vivisection. The article that accompanies the tiger's head is written by the editor and infers that this tiger is meant to be the portrait of vivisectors and their supporters. Apparently the latter have very little to say for themselves for we are told that they invariably quote the same thing—namely, Tennyson's line on "Nature red in tooth and claw." Then this learned and polite editor of the "humane monthly" kindly explains how the vivisector's theory of morals is that of the jungle, where wild beasts "seek their meat" by preying upon each other. We are further informed: "Defenders of vivisection, intrenching themselves behind the jungle concept of morals, are appealing to the savage instincts of primitive man. Innate human savagery finds fitting expression in the savagery of the jungle. 'Deep answereth unto Deep.' Both follow their instincts, but—the lower beast is not morally culpable because he has no moral responsibility, not being a rational being. Even if nature be cruel that cannot be any justification to a man in carrying on such a practice as vivisection. For do we not spend our days in opposing nature and putting a curb upon her?" Then the conclusion is: "To sum this question up, the vivisector's appeal to the cruelty of Nature, alleged or real, is an appeal to the non-moral law of the jungle."

Thus we are left to infer that the portrait of the tiger is symbolical of the character, the morals, and the general disposition of the vivisector and his partisans.

That such balderdash should be treated with contempt by the world of science is but natural. It is humiliating to have to stoop to deal with such flagrant manifestations of crass ignorance. Unfortunately, the question at issue is not wholly in the hands of the learned section of the community. These absurd pictures do appeal to ignorant sentimentalists. The latter are not likely to reflect, otherwise it would be obvious to them that tigers do not practise vivisection. It is equally certain that tigers do not apply anæsthetics when they devour alive any animal that they can catch. On the contrary it is precisely the scientific investigator who, when obliged to cut or to kill, does so with every care to prevent unnecessary suffering. He it is, too, who daily studies nature the better to put "a curb upon her." The jungle theory of morals is to leave things alone and to let disease prey upon us and the animals, and to permit the strongest to kill the weakest. Science, on the contrary, drains the jungle, tames or destroys the wild animals; studies, analyses, dissects, vivisects—in fact, employs all available means to unravel the laws of nature and to learn how to apply them, not to destroy and to devour, but to protect and to save both the weak and the strong, both man and beast. The tiger doubtless objects to this and so does the antivivisectionist but it is nevertheless what man calls human and humane progress.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AT the election of members of the Council on the first Thursday in July there will be three vacancies. Three members of the Council retire every year and this year it is the turn of Mr. T. Bryant, Mr. T. Pickering Pick, and Mr. J. Tweedy to retire. Mr. Bryant's third term of office, 24 years in all, will then come to an end and we believe that he does not intend to offer himself for re-election. Mr. Pick has already resigned, as he has left London. In ordinary circumstances Mr. Tweedy's term of office would end in July but as he will be President on the day of election his term of office lasts for another year. Thus only two vacancies occur in the natural course. The third vacancy is occasioned by the death of Mr. T. R. Jessop. This year three new members of Council, assuming that neither Mr. Bryant nor Mr. Pick will apply for re-election, have to be appointed. It is certainly unusual to have so many vacancies with no old member applying for re-election and we shall therefore expect a large number of candidates.

ASYLUM REPORTS.

The District Asylum, Ballinasloe (*Report for the year ending March 31st, 1903*).—The average number of patients resident during the year was 1210, comprising 733 males and 477 females. The admissions during the year amounted to 240—viz., 135 males and 105 females. Of these, 198 were first admissions. The report of the late Mr. R. V. Fletcher, the medical superintendent, states that in 37 of the cases admitted the mental disease "had existed for over 12 months and the delay in seeking efficient treatment is without doubt injurious to the prospect of recovery." Moreover, 26 of the patients admitted "were over 60 years of age and likely therefore to remain permanently" as chronic and incurable cases. The number of patients discharged as recovered during the year amounted to 85—viz., 53 males and 32 females, or 7 per cent. of the average number resident. The deaths during the year amounted to 80, or 6·6 per cent. as calculated on the same basis. Of the deaths, three were due to dysentery, five to bronchitis, five to cardiac disease, eight to epilepsy, 13 to senile decay, 20 to pulmonary tuberculosis, and the rest to other causes. The high death-rate from pulmonary tuberculosis "is due to the overcrowding which prevailed in the early part of the year before the new hospital was opened." "The experience of asylum physicians," the report continues, "is generally in favour of segregating the epileptics, and this idea is still further developed abroad in Germany and the United States, where special asylums or colonies for epileptics have been established with marked beneficial and curative effect. The establishment in Ireland (by groups of counties) of such asylums and colonies could not but tend to the comfort of the sufferers, afford opportunity for the wider study of the disease, and relieve the admitted congestion of district asylums without appreciable increase of cost." At the close of the year the number of persons suffering from imbecility and idiocy in the asylum was found to be 58. "It is much to be regretted that the younger persons of this class cannot in Ireland be sent to a training institution for imbeciles, where their capacity for improvement might be developed." The inspector of lunatics states in his report that the day-rooms and dormitories were bright and cheerful and afforded ample cubic space for the occupants, that the patients were

quiet, contented, and well behaved, that overcrowding existed as regards sleeping accommodation, a condition which called for speedy remedy, and that the medical case-books and records were well and carefully kept. A recommendation is also made that the committee should consider the importance of providing the necessary fittings and apparatus for the pathological room of the institution "so that the medical officers may be able to take advantage of this great field for scientific study."

Looking Back.

FROM

THE LANCET, *SATURDAY*, May 13, 1826.

INFLAMMATION of the iris first received the name of iritis from J. A. Schmidt, of Vienna, who published a small but admirable description of the affection in 1801. When the clear account of the phenomena, symptoms, progress, and consequences of this inflammation, contained in the work of Schmidt, is contrasted with the entire ignorance which then prevailed, in this and other countries, on the same subject, we shall become sensible how far the Germans have preceded all other nations in cultivating the ophthalmic department of our profession. A good analysis of this essay, which is in the German language, may be seen in the first volume of the Quarterly Journal of Foreign Medicine and Surgery; the intelligent writer gives a general account of the views entertained by the German practitioners on the subject of iritis.[1]

AT a general Meeting of the LONDON OPHTHALMIC INFIRMARY, held on the 18th of June, 1823, it was resolved—"That certificates to pupils be in future countersigned by the Chairman, or by the secretary, and registered by the latter; that a fee of five shillings be paid and set apart towards the *increase of the library*." Three years, within a month, have now elapsed, since this resolution was adopted, *and yet, not a single book has been purchased*, either for the use of the surgeons or of the students. As the money is ordered to be set apart, we should like to know where it is collecting, and who have the control of the fund.

Is it true that Dr. FARRE receives ONE THIRD of the fees paid by students for witnessing the SURGICAL PRACTICE? If so, it certainly is a most liberal reward for a *triennal rhubarb prescription*; this is indeed, FARRE *fetched* liberality, and caps, with one exception, every thing of the kind with which we have the happiness to be acquainted. The exception we allude to, is to be found in the ST. GILES'S INFIRMARY, where the *nominal* surgeon (fascinating creature!) positively OGLES the Governors out of one hundred guineas a year; whilst the *actual* surgeon who performs, in a most efficient manner, all the duties of the charity, cannot TWEEDLE them out of one hundred pence. Verily the *charitable* institutions of this metropolis are queerly conducted.[2]

MEDICINE AND THE LAW.

Reckless Exposure of Others to Infection.

AT Derby recently a flagrant and somewhat unusual case of the reckless exposure of others to infection was suitably punished by the infliction of a fine of £5 with the alternative of one month's imprisonment. The culprit was a Captain Feilden, stated to be a well-known resident, who appears to be the proprietor or compounder of an "ointment." With the idea of exhibiting the virtues of this salve he visited three houses where there were cases of small-pox and it was mentioned before the magistrate that he recommended the inmates of one of these dwellings not to permit the officers of the local health authority to enter. Having paid his visits he went about his usual avocations without any change of clothes or any disinfection of the garments which he was wearing, and being, fortunately for his neighbours, detected in this the punishment mentioned has been meted out to him. He may count himself lucky that no case of infection was traced to his negligence, for in such an event he would presumably have incurred a heavy civil liability in addition to a possible increase of the penalty inflicted.

[1] Excerpt from lecture on the Anatomy, Physiology, and Diseases of the Eye by Mr. Lawrence, delivered in the London Ophthalmic Infirmary, Moorfields.

[2] Editorial observations.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on May 3rd, Dr. T. S. CLOUSTON, the President, being in the chair.

The Curator submitted his report for the last year regarding the research and reporting work undertaken in the laboratory during the year and the expenditure incurred. The report showed that 35 workers had been engaged in research; that 2365 specimens had been reported on, being an increase of 497 on the number for the previous year; and that the expenditure had amounted to £1038 1*s.* 6*d.* The report was adopted by the College.

By a vote of the College Allan Douglas Cameron, a Licentiate of the College, was expelled from the College and deprived of his Licence to practise as granted by the College and of all his rights and privileges as Licentiate.

On a motion by the PRESIDENT the College instructed the Council to take action in favour of a clause being inserted in the Education Bill for Scotland providing for medical inspection of schools, so that school hygiene and the physical education and condition of the school children may become part of the educational system of the future in Scotland.

Public Health and Poor Law.

LOCAL GOVERNMENT BOARD.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

The Borough of Crewe.—There were 64 stillborn children buried in Crewe in 1903, the proportion of stillbirths to total births having been 4·4 per cent. Dr. A. J. Laird criticises adversely the fact that the registration of stillbirths is not required and that such bodies are frequently buried on the certificate of a midwife or a nurse. He also quotes the county medical officer of health to the effect that "under the present system there appears to be nothing to prevent an infant who has lived a few minutes or a few hours being clandestinely conveyed to a nameless grave without the cause of death being certified or inquired into. It is also obvious that through there being no regular register for stillbirths concealment of births is facilitated." In connexion with this question of infantile mortality generally Dr. Laird expresses the opinion that "the only educational measures which promise any benefit are the frequent visits of sanitary inspectors and, most important of all, the teaching of schoolgirls the elements of hygiene and the proper management and feeding of infants." We are glad to read further on in this report that recently a considerable amount of attention has been given to the elementary schools and that the local education authority is about to remedy all the defects which have been discovered. More light, ventilation, and cubic space are apparently required in many instances and two of the schools are likely to be closed altogether. Doubtless, Dr. Laird will also urge upon the education authority the importance of the periodical inspection of the scholars and of a well-directed system of physical education.

The Borough of Hove.—Dr. Augustine Griffith, in referring to the important subject of infantile mortality and to the connexion which such mortality bears to improper feeding, has drawn up leaflets which are left at houses where births have taken place and which in simple language explain the principles that should govern the feeding of infants. Dr. Griffith also urges the importance of educating girls in the preparation of food and in the management of children. We referred in a recent leading article on the Education Act and Physical Fitness[1] to the

[1] THE LANCET, April 9th, 1904, p. 1004.

importance of taking action in our schools with respect to the education of girls in these particulars and we hope that the matter will have the attention of every medical officer of health. An interesting illustration is furnished in the report before us of the importance of cooking mussels even although such cooking may not always amount to complete sterilisation. The mother of a family boiled some mussels for her husband, her children, and herself and all partook thereof. The mother was subsequently attacked with enteric fever and she eventually admitted that she had eaten a few of the mussels in a raw state. Presumably there was no other cause more likely than this to account for the attack.

St. Thomas's Rural District, Exeter.—Mr. Mark Farrant reports the fact that in a certain house in his district there have been six cases of enteric fever, the cases having occurred in this fashion—one in 1898, two in 1899, two in 1901, and one in 1903. The house is built almost on the solid rock and the sanitation and water-supply are, it appears, quite satisfactory. Mr. Farrant thinks it possible that infection may have remained in the bedding, although it was disinfected on each occasion. This repeated invasion of one house is, in our experience, not so uncommon as is believed. We have ourselves seen numerous instances of it and there has in all cases been evidence pointing to the conclusion that disinfection had not been thoroughly carried out. The necessity for disinfection after cases of enteric fever does not appear to be recognised so generally as the facts merit.

Stockton Rural District.—Mr. J. W. Blandford has strong views with regard to the alleged deterioration of the working classes. He regards the deterioration, which he apparently accepts as a fact, as due in large measure to the defective feeding of infants and to the tendency on the part of mothers to forego the duty of suckling their offspring. He adds, "If the people would as carefully consider what is the best way of feeding for developing the human animal as farmers must do to make a profit out of the feeding of their animals, the general physique of the population would improve quite as much as it has done in the beast and sheep. The question of proper feeding is not so much a question of increased cost as a knowledge of what to feed on and how to prepare it." There is of course a good deal of truth in this statement, but it has to be remembered that in cattle breeding artificial selection is largely practised and we are not likely to arrive at this form of control in the human species for some years to come.

Taunton Urban District.—Epidemics of measles and whooping-cough occurred in this district during 1903 and Dr. H. J. Alford deplores the small amount of attention which is paid to these two diseases by the parents as compared with the panic which arises in connexion with any illness having the affix "fever." Possibly it might really be worth while in order to impress the serious nature of measles upon the people to apply the term "spotted fever" to it. Dr. Alford also deplores the fact that nearly all the infants' lives are insured and he holds the opinion that the practice of insurance in this sense should be put a stop to.

Burgh of Govan.—Dr. James Barras thinks that no appreciable reduction in the death-rate from tuberculosis will take place until the public are convinced of the infectious nature of the disease, but on the opposite page he furnishes figures which seem to show that from 1864 to 1868 tuberculosis caused 23·6 per cent. of the total deaths whereas in 1899 to 1903 the percentage was but 12·8. The tuberculosis death-rate per 1000 of the population does not appear to be furnished but the general death-rate of the population has fallen from 33·0 in 1864 to 18·9 in 1903 and the population has increased from 9058 in 1864 to 91,103 in 1903. In 1864 there were 65 deaths from tuberculosis, in 1903 there were 214. Another illustration of the desirability of boiling cockles before consuming them is contributed by Dr. Barras. A family consisting of four persons ate cockles at a watering-place on the west coast of Scotland, all the cockles being consumed in the raw state. These four persons after the usual period of incubation developed enteric fever and two of them (father and son) died. About the same time other cases were brought to notice and it was found that they, too, had consumed similar shell-fish. The family first referred to brought home cockles for their friends and these were divided amongst four families in the burgh. In each of these families one member who had alone partaken of the cockles in a raw state developed the disease, while the remaining eight persons who had boiled the cockles for from five to ten minutes all escaped. Two other persons who took both cooked and raw cockles were indisposed for several days with diarrhœa, &c. This appears to be a strong chain of evidence tending to incriminate the cockles, and this suspicion is still further strengthened by the fact that the molluscs were collected from a foreshore which was apparently obviously liable to pollution. The fact that the examination of cockles collected from the same locality as those which were consumed in the cases in question revealed "the presence of the bacillus coli communis" does not in view of the report of the Royal Commission on Sewage Disposal and of Dr. A. C. Houston's appendix thereto amount to very much, but the fact that some of the cockles contained the bacillus of enteric fever in great numbers is conclusive evidence that the cockles which are believed to have caused the disease were exposed to the risk of specific pollution. Having regard, however, to the difficulty in demonstrating the presence of this bacillus in shellfish it would have been well had the precise methods used by the bacteriologist been set forth.

The Borough of Lowestoft.—A case of small-pox occurred in the district during the summer of 1903 which illustrates the importance not only of providing isolation accommodation for cases of this disease but also of appointing a medical superintendent to such hospital. A visitor from Cambridge developed small-pox at Lowestoft and the medical attendant sought the assistance of Dr. A. Marshall, the medical officer of health, who at once removed the case to the small-pox hospital, situated about four miles from Lowestoft. But the medical attendant who had been called in refused to attend the case, as also did the medical officer of health in whose district the hospital was situated, and finally Dr. Marshall felt morally bound to attend the case himself. This is a somewhat unsatisfactory state of affairs and we trust that this incident has led to the appointment of a medical superintendent, or at least some medical practitioner whose duty it is to attend the cases in the hospital. We are, however, glad to see that the corporation appreciated the timely assistance of Dr. Marshall and also that the patient and her husband expressed to him their gratitude for his kindness.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8403 births and 4359 deaths were registered during the week ending May 7th. The annual rate of mortality in these towns, which had been 17·6, 16·0, and 16·3 per 1000 in the three preceding weeks, declined again last week to 14·9 per 1000. In London the death-rate was 14·9 per 1000, which was also the mean rate in the 75 other large towns. The lowest death-rates in these towns were 4·3 in Smethwick, 5·2 in Leyton, 6·0 in Burton-on-Trent, 6·2 in Devonport, 6·7 in Willesden and in East Ham, 7·8 in Tottenham and in King's Norton, and 8·0 in Walthamstow; while the highest rates were 18·6 in Liverpool, 19·4 in Wigan, 20·0 in Salford, 21·3 in Blackburn, 21·5 in Plymouth, 23·1 in Manchester, 23·7 in Merthyr Tydfil, and 26·5 in St. Helens. The 4359 deaths in these towns last week included 514 which were referred to the principal infectious diseases, against 530, 556, and 527 in the three preceding weeks; of these 514 deaths 195 were referred to whooping-cough, 158 to measles, 56 to diarrhœa, 51 to diphtheria, 32 to scarlet fever, 17 to "fever" (principally enteric), and five to small-pox. No death from any of these diseases was registered last week in Leyton, Bournemouth, Reading, Burton-on-Trent, Wolverhampton, Smethwick, Barrow-in-Furness, or Halifax, while the highest death-rates from the principal infectious diseases were recorded in Birmingham, Aston Manor, St. Helens, Warrington, Manchester, Salford, Burnley, and Blackburn. The greatest proportional mortality from measles occurred in Brighton, Wallasey, St. Helens, Warrington, Manchester, Burnley, Huddersfield, Leeds, and Rhondda; and from whooping-cough in Walsall, Birmingham, Kings Norton, Aston Manor, Grimsby, Warrington, Bury, Manchaster, Salford, Blackburn, Newcastle-on-Tyne, and Swansea. The mortality from each of the other principal infectious diseases showed no marked excess in any of the large towns. Of the five fatal cases of small-pox registered in these towns last week one belonged to London, one to Stockport, one to Manchester, one to Tynemouth, and one to

Newcastle-on-Tyne. The number of small-pox patients remaining under treatment in the Metropolitan Asylums hospitals, which had been 144, 123, and 104 on the three preceding Saturdays, had further declined to 88 on Saturday last, May 7th; 14 new cases were admitted during the week, against 37, 23, and 12 in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of the week was 1590, against 1523, 1543, and 1541 at the end of the three preceding weeks; 242 new cases were admitted during the week, against 172, 210, and 185 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 295, 254, and 224 in the three preceding weeks, further declined last week to 193, and were 69 below the number in the corresponding period of last year. The causes of 47, or 1·1 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Leicester, Nottingham, Salford, Leeds, Newcastle-on-Tyne, and in 49 other smaller towns; the largest proportions of uncertified deaths were registered in Portsmouth, Ipswich, Birmingham, Liverpool, St. Helens, Manchester, and Preston.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 20·9, 21·0, and 20·0 per 1000 in the three preceding weeks, further declined to 18·0 per 1000 during the week ending May 7th, but was 3·1 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 9·2 in Perth and 12·3 in Leith to 20·1 in Glasgow and 20·4 in Dundee. The 594 deaths in these towns included 25 which were referred to whooping-cough, 16 to measles, nine to diarrhœa, four to scarlet fever, four to "fever," three to small-pox, and three to diphtheria. In all, 64 deaths resulted from these principal infectious diseases last week, against 65, 79, and 71 in the three preceding weeks. These 64 deaths were equal to an annual rate of 1·9 per 1000, which was slightly in excess of the mean rate last week from the same diseases in the 76 large English towns. The deaths from whooping-cough, which had been 20, 29, and 22 in the three preceding weeks, rose again to 25 last week, and included 13 in Glasgow, six in Edinburgh, two in Dundee, and two in Paisley. The fatal cases of measles, which had been 21, 26, and 19 in the three preceding weeks, further declined last week to 16, of which 12 were registered in Glasgow and two in Greenock. The deaths from diarrhœa, which had been 15, 11, and 13 in the three preceding weeks, declined again to nine last week and included five in Glasgow and two in Dundee. The fatal cases of scarlet fever, which had been four and three in the two preceding weeks, rose again last week to four, of which three occurred in Glasgow. The three deaths from small-pox corresponded with the number in the preceding week, and included one in Glasgow, one in Paisley, and one in Greenock. The deaths from diseases of the respiratory organs in these towns, which had been 152, 115, and 121 in the three preceding weeks, declined again last week to 100, and were slightly below the number in the corresponding period of last year. The causes of 24 or more than 4 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 24·4, 23·3, and 20·8, per 1000 in the three preceding weeks, rose again to 23·1 per 1000 during the week ending May 7th. During the past four weeks the death-rate has averaged 22·9 per 1000, the rates during the same period being 15·8 in London and 16·6 in Edinburgh. The 168 deaths of persons belonging to Dublin registered during the week under notice were 17 in excess of the number in the preceding week, and included 18 which were referred to the principal infectious diseases, against 17, ten, and eight in the three preceding weeks; of these, 11 resulted from whooping-cough, four from measles, two from "fever," and one from diarrhœa, but not any from small-pox, from scarlet fever, or from diphtheria. These 18 deaths were equal to an annual rate of 2·5 per 1000, the death-rates last week from the principal infectious diseases being 1·8 in London and 1·1 in Edinburgh. The fatal cases of whooping-cough, which had been 11, five, and three in the three preceding weeks, rose again last week to 11. The deaths from measles, which had been four, three, and two in the three preceding weeks, increased again to four last week. The 168 deaths in Dublin last week included 38 among children under one year of age and 37 among persons aged 60 years and upwards; the deaths of infants considerably exceeded the number in the preceding week, while those of elderly persons showed a slight decline. Eight inquest cases and five deaths from violence were registered, and 56, or exactly one-third, of the deaths occurred in public institutions. The causes of five, or nearly 3 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: A. M. Page to the *Suffolk* on commissioning; J. Shand to the *Glory*, additional, for Wei-Hai-Wei; and H. O. Beatty to the *Boscawen*, for *Boscawen* (No. III.). Staff Surgeon L. Kilroy to Bermuda Hospital. Surgeons: R. H. St. B. E. Hughes to the *Hogue* and to the *Suffolk*; M. H. Knapp to Plymouth Hospital; N. S. Meiklejohn to the *Monmouth*; W. G. Westcott to the *Egmont*, for Malta Yard; G. F. Alderdice to the *Albemarle*; and T. D. Liddle to the *Exmouth* and to the *Prince of Wales*.

ROYAL NAVAL VOLUNTEER RESERVE.

John Alexander Campbell Kynoch to be Surgeon.

Scots Guards: Surgeon-Lieutenant-Colonel G. S. Robinson retires on retired pay (dated May 7th, 1904).

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel W. W. Kenny to be Colonel on augmentation (dated April 1st, 1904).

Lieutenant-Colonel W. L. Lane retires on retired pay (dated May 11th, 1904).

The undermentioned Lieutenants to be Captains:—M. F. Foulds (dated April 9th, 1904); J. B. Clarke (dated April 14th, 1904); and D. L. Harding (dated April 26th, 1904).

Colonel G. D. N. Leake has been transferred from the Bombay and Nagpore Districts to the Oudh and Rohilkund Districts. Lieutenant-Colonel T. B. Tuckey (retired) is noted for appointment as medical officer in charge of the Cork Military Prison.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain H. D. Brook to be Surgeon-Major (dated April 23rd, 1904).

IMPERIAL YEOMANRY.

Denbighshire (Hussars): Surgeon-Captain R. Williams resigns his commission (dated May 7th, 1904).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st West Riding of Yorkshire: Surgeon-Lieutenant P. J. S. Bird to be Surgeon-Captain (dated May 7th, 1904).

Rifle: 1st (City of Dundee) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Lieutenant G. F. Whyte to be Surgeon-Captain (dated May 7th, 1904).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

The Leeds Company: William McGregor Young to be Lieutenant (dated May 7th, 1904). The Manchester Companies: Captain J. B. Mann to be Major (dated May 7th, 1904).

BEARER COMPANY ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Sussex and Kent: James Augustus Booth to be Lieutenant (dated May 7th, 1904).

THE KING'S BIRTHDAY.

The King's Birthday will be celebrated in London and at all Home Stations on Friday, June 24th next. At all Foreign Stations His Majesty's Birthday will be celebrated on Wednesday, Nov. 9th next.

PHILANTHROPY IN WAR.

The *Times*, apropos of voluntary aid to the sick and wounded in the Russo-Japanese war, alluded not long ago to the desirability of having a philanthropic organisation

which only aims at an impartial alleviation of the sufferings of the combatants and is quite untainted by any race hatred or by any political or national prejudice. The subject is really one which deserves far more consideration than it obtains. To say nothing of the difficulty of apportioning aid in relief of the sick and the wounded in war equally and fairly between the belligerent forces there is another point which should not be altogether lost sight of. Such philanthropic movements and systems on the part of neutrals have the effect, in some measure at any rate, of relieving the belligerents of the cost and responsibility of war by freeing them from the care of their sick and wounded, and of throwing into the purchase of war material the sums saved in not having to provide for their wants, thereby enabling a general, it may be, to prosecute a campaign with greater energy, activity, and success. All will agree that the aim and the object as well as the work actually performed by Red Cross societies in time of war are most laudable and praiseworthy, but the difficulties attending the carrying out of the Geneva Convention are nevertheless many and great. If we are to avoid all partiality and possibility of aiding one of the belligerents at the expense of the other our benevolent efforts should be directed and confined to the relief of the sick and the wounded as such, and quite irrespectively of our sympathies with one side or the other in regard to nationality, race, creed, or politics. General Kuroki, telegraphing on May 3rd, reported that a careful search of Sunday's battlefield disclosed 200 dead and wounded among the Russians in addition to the number previously reported and he expected that more would be found when the searches of the Japanese medical corps were complete. The general added that among the prisoners was a medical field officer whom the Japanese ordered to assist in caring for the wounded Russians and Japanese. This officer at once obeyed and is now engaged in treating the wounded of both armies. That is the proper spirit and an illustration of the line to be followed.

THE WAR IN THE FAR EAST.

Whatever may be the final outcome of the present war in the Far East and whether Russia will be able hereafter to reverse the results or to repair the disastrous fortunes that have attended her arms up to the present time no one can say. But the strength, leadership, and tactics of the Japanese as compared with the weakness of their giant adversary have been such striking features of the war that no one could miss seeing them. We have no complete returns of the total losses sustained on either side in the various naval operations and engagements, but according to the official accounts of those on land in the recent fighting on the Yalu and in the subsequent retreat of the Russian forces it appears that the Russian losses are officially placed by General Kuropatkin at 70 officers and 2324 men killed, wounded, or prisoners. The Japanese return their losses at five officers and 180 men killed and 25 officers and 690 men wounded. According to the special correspondent of the *Standard* at Tokio the Japanese, as the result of the fighting on the Yalu, are said to have buried over 1300 Russians between Kiu-lien-cheng and Tang-shan, a distance of 20 miles. From a St. Petersburg telegram we learn that General Kuropatkin has requested the Russian Red Cross Society to supply 2000 more beds for the use of the military hospitals at the front.

ARMY ORDERS FOR MAY.

There are a few subjects of medical interest in the Army Orders for May promulgated by direction of the Army Council to which we may call attention, such as the following:—An amended regulation regarding pay and allowances of Queen Alexandra's Imperial Military Nursing Services and one regarding additional pay, corps pay, and extra duty pay of the non-commissioned officers and men of the Royal Army Medical Corps. Soldiers who are detained in hospital after discharge or transfer to the Army Reserve shall not be subject to hospital stoppages. Revised hospital equipment schedules have been approved. These schedules are confined to the hospitals shown therein. A scheme of centralisation under which important central hospitals only will be retained is now under consideration.

MILITARY DENTISTRY.

The subject of the care and the preservation of soldiers' teeth in our army has occupied of late the attention of the War Office in this country and a start has been already made in this direction by the appointment of some surgeon-dentists for our troops serving at home. Military dentistry is also receiving a considerable amount of attention at the present time in the German army where practical instructions have been issued and lectures given on the hygiene of the mouth and care of the teeth. Our service contemporary the *Broad Arrow* of last week has some timely remarks as to the importance of the subject as regards the health and efficiency of the soldier.

Correspondence.

"Audi alteram partem."

THE TENURE OF OFFICE OF THE MEDICAL OFFICER OF HEALTH.

To the Editors of THE LANCET.

SIRS,—The very nature of the employment of a medical officer of health, if he conscientiously does his work, subjects him to the risk of a want of appreciation from his council. It is true that tact will accomplish much for him, but sometimes no amount of tact is sufficient to mollify the ruffled feelings of a member of a council who has been put to considerable personal expense through the zeal of the medical officer of health. This possibility appears to have been foreseen by the framers of the Public Health Act of 1875, for that Act contains provisions intended to prevent that official being ousted from office by his local authority without sufficient reason. By providing for the payment of one-half of his salary from county funds—if the appointment is sanctioned by the Local Government Board—the Act puts him in the same position as a district medical officer of a union with regard to duties, tenure of office, &c.—that is, he cannot be dismissed from office by the local authority without the consent of the Local Government Board.

It is curious, however, that in many instances these very provisions for his security not only afford him no protection but actually render him more insecure than those other officials who are not so provided for. The spirit of the Act is set at naught by most local authorities by making the appointment for a limited time, generally from year to year. During the continuance of the year's appointment the officer's dismissal would have to be sanctioned by the Local Government Board. At the end of the year the appointment is vacant and it is open to any member of the local body to propose its advertisement or to move for the appointment of someone else. No reason for this course need be given except to his colleagues on the council; and anyone who is familiar with the working of some rural district councils will know that this is not necessarily a difficult task. I am acquainted with one rural district council which numbers three members, so that an agreement between two of them would constitute a majority of the council.

It will be seen that the annual raising of the question of the re-election of the medical officer of health yearly reminds the members of his authority that they have the option of electing him or not. I am personally acquainted with a case where this possibility of non-re-election was for years held as a threat over the head of the medical officer of health if he did this or if he did that. In the case of other officials who can be dismissed at the wish of the council the yearly question does not arise and their positions are to that extent the more secure. I have heard it represented that if all medical officers of health were appointed permanently one result would be that a number of existing inefficient officials would be secured in office to the detriment of their districts. It is just this type of medical officer who is already quite secure—the less he does the better he is liked. I venture to obtrude on your space on this matter because I feel certain that this is one of the factors at present tending to impede sanitary progress in many districts. It is not a question which personally affects me because my council has already made my appointment a permanent one.

I am, Sirs, yours faithfully,

E. H. SNELL,
Medical Officer of Health of Coventry.

May 20th, 1904.

To the Editors of THE LANCET.

SIRS,—As one who is vitally interested in this question I was glad to see two letters on it in THE LANCET of May 7th, both full of good points. Has it ever struck any of your readers that the medical officer of health and the sanitary inspector, be they the officials of a large or of a small town, are the only officials whose appointments are subject to periodical

revision? The town clerk, surveyor, treasurer or accountant, water engineer, gas engineer, rate collectors, yea, even the scavenging superintendent and the sewage works manager, are all appointed without limit of time and not a single one of these has to perform duties fraught with anything like the same degree of danger to his tenure of office. Why should these two poor officials, who have so frequently to compel their employers to spend money on insanitary property, be singled out and have to depend for their bread and butter on the caprice of those very employers? Common sense and a due appreciation of human nature show at once that the combination is the worst possible one.

For those in small districts the evil is undoubtedly serious, but inasmuch as the medical officer of health of such a small district has his private practice as a mainstay he can usually afford to be moderately independent. In the case of whole-time men I fear the system is more dangerous still, for, in the first place, there are many more chances of giving offence and, in the second place, if offence is unfortunately given and taken and the officer is turned out he has to commence life afresh, maybe at a time when his personal and family expenses are at their heaviest. I know of one such case and I know that the man is practically broken for life. He was probably somewhat tactless I must confess but the punishment in his case was certainly not one which "fitted the crime."

I sincerely hope that a determined stand will be made soon and that the Local Government Board will come to the help of those who throughout the length and breadth of the land are bearing the toil and heat of the day and reaping the least reward. Surely, too, the various societies and unions of town clerks, surveyors, engineers, and others will raise their voices in support of their less fortunate brother officials.

I am, Sirs, yours faithfully,

May 10th, 1904. PROVINCIAL WHOLE TIMER.

To the Editors of THE LANCET.

SIRS,—The announcement to which your correspondents called attention last week, that the Local Government Board "had had under consideration generally the question of the tenure of office of the medical officers of health," cannot fail, so far as it goes, to be satisfactory to the whole body of the medical profession. Years ago their brethren, the Poor-law medical officers, found their positions so difficult and intolerable on account of the insecurity of tenure of their office that, supported by the active sympathy and determination of the profession to which THE LANCET gave strong expression, they obtained the right of appeal and of pension. These privileges were subsequently extended to the clerks, relieving officers, and others engaged in the Poor-law service. As a result the status of this service has been greatly improved and the well-being of the community promoted. The Local Government Board administers both the Poor-law and the Public Health Acts and controls both the Poor-law service and the public health service.

But while the Local Government Board exercises a veto upon the dismissal of the Poor-law officers it claims a veto only upon the appointment of the health officers—the medical officer of health and the inspector of nuisances—and not upon their dismissal, although it pays half their salaries. Such an anomaly is almost inconceivable and it seems incredible to foreigners. The duty of the medical officer of health is to safeguard the greatest interest the community possesses. That there should be no doubt in his mind the Local Government Board gives him the most distinct directions in his work, obedience to which must necessarily affect the private interests of some members at least of almost every sanitary authority. If these are in a majority, and they may well be in these days, at the end of the one, two, or three years of his appointment, as the case may be, he may find another appointed in his place. This is not regarded as dismissal although he may have served for 20 years; he is supposed to have nothing to complain of and the Local Government Board promptly proceeds to sanction the appointment of his successor.

Now, the medical profession, who have some influence, do not agree any more than they agreed that the Poor-law medical officer had nothing to complain of. The sanitary inspector, who is ordered by the Local Government Board to look to the medical officer of health for direction in his work, is in much the same position if he obeys that order, and he does not agree that he has no grievance if he be dropped at the end of his year of appointment after having served his authority faithfully for several years perhaps.

This great blot upon the public health administration of the country is so obvious an evil that it does not need emphasising. It is astonishing it has not been removed long since if only for the credit of the State. Should the results of the consideration now being given to the question, however, be simply the recommendation to certain sanitary authorities to reappoint their medical officers of health without limit of time past experience has proved it will not be effective; the disabilities which weaken the hands of, and weigh down, the majority of sanitary officers who are striving to do their duty as honourable men and public servants will continue to oppress them; and the community will still be denied that full protection of its greatest interest for which it pays and which it is its right to receive.

I am, Sirs, yours faithfully,

May 9th, 1904. X.

To the Editors of THE LANCET.

SIRS,—I have held the position of medical officer of health to an urban district for nearly 15 years and am appointed yearly. Two or three years after my first appointment a member of the sanitary authority—a regular client of mine—called on me a few hours before the meeting at which I fully expected my reappointment would be made. He asked me to produce abortion on his unmarried daughter and went away in high anger after my polite refusal and explanation. At the meeting he proposed that another man should be appointed in my place and in an exceptionally thinly attended meeting the motion was carried and, to my surprise, I found myself "out in the cold." Influence on my behalf was brought to bear by the members of the authority who were not present at the meeting and by others: the Local Government Board interfered and in a couple of months I was reinstated in my office. When the letter from the Local Government Board suggesting that my reappointment should be "without limit of time" was read at a recent meeting there seemed a likelihood of the appointment being made permanent until a member whispered to the chairman: "If you pass the resolution you cannot get rid of him." The meeting took alarm at once and made the appointment, as before, for one year.

The above are concrete facts, and I may add one more and that is, although I am as independent and tactful as most men, I dare not, as medical officer of health, do my duty as defined by the Local Government Board while the rod of dismissal is always hanging over my head.

I am, Sirs, yours faithfully,

THOROUGH.

ON THE SO-CALLED PANCREATIC REACTION IN THE URINE.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of March 19th, 1904, p. 782, Dr. P. J. Cammidge gives the substance of his Arris and Gale lecture on the Chemistry of the Urine in Diseases of the Pancreas. Therein he describes a reaction in the urine obtainable in all cases of pancreatic disease and occasionally in other diseases "where active tissue change is taking place." This reaction, taken in conjunction with the physical signs and symptoms, he considers of great aid in the diagnosis of pancreatic cases and even as yielding a means of differentiating the various forms of such disease one from another. As far as we can discover from the Arris and Gale lecture the reaction was based on the fact that fat necrosis, sometimes seen in certain diseases of the pancreas, was due to the splitting up of neutral fats, in certain situations into glycerine and their corresponding fatty acids. It was supposed that the glycerine so liberated entered the circulation, was eliminated by the kidneys, and might in the urine be detected by conversion into glycerose, testing for this latter with phenylhydrazine. The scientific basis for the above seems to us rather doubtful, but in view of the importance to be derived from a reliable test for pancreatic disease we submitted the reaction to careful investigation. The urines experimented on were those of normal persons and of patients in one of the general wards of this hospital who, as far as we could ascertain, were not suffering from any pancreatic disease. Our experiments were as follows.

All the urines were tested for the two reactions, A and

B, and the method described by Dr. Cammidge followed in exact detail with the exception that the flask was heated over asbestos gauze instead of on a sand bath, the result being that a slightly more concentrated solution would probably result than if the latter had been used. We found that in all the cases thus examined the typical yellow crystals in rosettes and sheaves were obtained provided the solution was sufficiently concentrated, and even if rather too dilute a deposit was generally found on leaving for 24 hours, the presence or absence of the crystals we obtained therefore depending on the concentration of the liquid. Continuing our observation we were led to think that the reaction we obtained might be connected with the presence of a lead salt and to see if this were so the following experiments were undertaken. Firstly, the same urine was used as before, only this time after the solution had been neutralised with lead carbonate and filtered ammonium sulphide was added to the clear filtrate and a black precipitate of sulphide of lead was obtained. This was filtered off and the filtrate, which was now free from lead salt, was heated to drive off any ammonia or sulphuretted hydrogen and the precipitated sulphur separated off by filtration. To this solution was now added the requisite amount of sodium acetate and phenylhydrazine hydrochlorate. Under these conditions no rosette-shaped crystals appeared, no matter how great the degree of concentration. Secondly, distilled water was used to replace the urine and the test was carried out in exactly the same way as Dr. Cammidge described in Section A. Similar rosettes of crystals, only paler in colour, were obtained unless the lead had been previously removed by ammonium sulphide. Thirdly, lead acetate solution was treated with sodium acetate and phenylhydrazine hydrochlorate and again the typical fine needle-shaped crystals in rosettes and sheaves were found. Similar crystals were, of course, not obtained if sodium acetate and phenylhydrazine hydrochlorate were heated together alone.

The addition of a saturated solution of perchloride of mercury to the urines had as far as we could discover no effect on the formation of the crystals, and indeed we fail to see why in pancreatic cases this test should be of any use in distinguishing between the crystals found in cases of acute pancreatitis and in those in cases of chronic pancreatitis or malignant disease of that organ. We have, unfortunately, not had the opportunity of examining many urines from patients known to be suffering from pancreatic disease as proved at post-mortem examinations, but those we have tested did not give the typical rosettes of crystals as described by Dr. Cammidge after lead salts had been carefully removed.

To sum up, then, we have always been able to find in any urine examined by us yellow needle-shaped crystals in rosettes and sheaves apparently identical with those described by Dr. Cammidge as being frequently associated with pancreatic disease. In view of the importance of the test we should be very glad if these points above referred to could be cleared up.

We are, Sirs, yours faithfully,
CHARLES E. HAM, M.B. Lond.,
J. BURTON CLELAND, M.D. Sydney.
(From the Pathological Institute, London Hospital.)

SANATORIUMS FOR WORKING MEN.

To the Editors of THE LANCET.

SIRS,—In your leading article in THE LANCET of May 7th, p. 1291, on "Sanatoriums for Working Men" you refer to the value of the practice of bringing medical lecturers into contact with audiences comprised of the working classes. From personal experience I can endorse the views to which you have given expression, but I do not agree with utilising these lectures solely for the purpose of advocating the establishment and maintenance of sanatoriums, for by so doing working men are being misled. You have on more than one occasion pointed out the extreme danger of spreading abroad exaggerated statements as to the actual value of sanatorium treatment and have very rightly shown how unreliable are many of the statistics that have been published recording the results obtained in these institutions. Only within the past two months I have seen three "cases" which had been discharged as "cured" from a sanatorium, but the patients became rapidly ill again after having returned home a comparatively short time and died from pulmonary tuberculosis. I have no doubt many other medical men have had a similar experience. To lead working men therefore to believe that sanatorium treatment is a "miraculous panacea" and is the only means by which the open-air method can be applied is, in my judgment, not proceeding on sound lines. In this way the main object to be aimed at in combating consumption—housing reform and improved sanitation—is being overlooked.

I concur with you as to the extreme importance of early diagnosis and the most effective way of bringing this about is by erecting in different centres of industry anti-tubercular dispensaries, which Brouardel, Calmette, and others have proved to be so efficacious, both from a therapeutic and educational point of view, on the continent. I regret to find that in this country we are entirely ignoring a scheme which Calmette has said is the first step that should be taken for effectually struggling with tuberculosis in large communities.—I am, Sirs, yours faithfully,

J. CUNNINGHAM BOWIE, M.B., C.M. Glasg.
Cardiff, May 6th, 1904.

A MUCH AFFLICTED PATIENT.

To the Editors of THE LANCET.

SIRS,—It is not often that it falls to the lot of one surgeon to have to deal with so many tangible maladies in the same patient as in the case I relate. A female patient came under my care three years ago with the following list of ailments: (1) fibroma of the abdominal wall; (2) dilated stomach; (3) prolapse of uterus (external); (4) enlargement of both ovaries; (5) double inguinal hernia; and (6) hæmorrhoids and vascular caruncle. To relieve her I performed at intervals gastro enterostomy, hysteropexia, and oöphorectomy, and also two radical cures for hernia; ligatured the hæmorrhoids, excised the caruncle, and removed the fibroma. She remained free from much trouble for three months, when she returned complaining of persistent discharge from the ear. I felt I had done enough for her, so I handed her over to an aural specialist. We often have to listen to a catalogue of invisible ailments. In this case all the conditions that I have mentioned were capable of demonstration.

I am, Sirs, yours faithfully,
Leeds, May 7th, 1904. W. H. BROWN.

THE MODE OF INFECTION BY NEMATOIDS.

To the Editors of THE LANCET.

SIRS,—With reference to the discussion between Dr. H. Charlton Bastian and Dr. G. C. Low under this head, besides the mechanical difficulty of mosquito infection of the filaria I would point out that the parent worm of the filaria perstans has been found in the mesentery and situations near the upper part of the alimentary canal only. The parent worm of a form of filaria found in the bird commonly called the "Old Witch" (Crotophaga Ani) is found beneath the mucous membrane of the craw; in that of the bird called the banya (Ostinogos decumanus) the parent worm is found in cysts in the abdomen, some of which are connected with the lower part of the œsophagus. These filariæ appear to be the same though the parent is much larger when in the abdominal cavity. This certainly points to this form of filaria being infected through the alimentary canal and supports by the position found of the parent filaria perstans that they are also infected through the same channel.

I am, Sirs, yours faithfully,
British Guiana, April 18th, 1904. C. P. KENNARD.

FISH OIL AND COD-LIVER OIL.

To the Editors of THE LANCET.

SIRS,—In your report of a case of substitution of fish oil for cod-liver oil in THE LANCET of May 7th, p. 1300, it is stated that "evidence was given of the serious aspect of such substitution ..... taking into account the not only *useless but detrimental qualities of fish oil.*" Such a statement is of great interest to me. I must in the first place admit that I do not know how comprehensive the term "fish oil" may be but the above statement does not accord with my experience from a practical trial with the oil obtained from the pilchard, which I suppose may be considered a "fish oil." For some

years past it has been my desire to try the effect of the oil obtained from the pilchard as a substitute for cod-liver oil and in October, 1903, I asked Mr. Peck, the dispenser of the Hospital for Sick Children, Great Ormond-street, if he could obtain a sample of such oil. When the oil was first obtained I was informed that it could not be taken internally and on inquiry as to the reason I was informed "that a mistake had been made and that it could be taken internally and, in fact, was given to children in Cornwall as a substitute for cod-liver oil." I have not verified this statement. Having procured the oil it was necessary first to find out if the oil possessed any toxic properties and for this purpose I took some of the crude oil and also an emulsion which was prepared for me by the dispenser. I cannot say that either the crude oil or the emulsion was pleasant to take, but I do not think, if my memory serves me, that the taste was worse than the older preparations of cod-liver oil. Certainly no unpleasant symptoms resulted saving the "repeat" which may, in certain individuals, occur with any form of cod-liver oil.

I then selected cases both from among the out-patients and in-patients to try the effect of the oil. I may say at once that some children, generally the younger ones, took it fairly well but it was resented by the older children who complained that "it was nasty and repeated." The sister and nurses also said that the children would not take it as readily as they would cod-liver oil. I then asked the dispenser if he could obtain a better and more refined sample of this oil and this he succeeded in doing. I tried this sample and certainly in appearance, smell, and taste it was preferable to the original sample. It made a good emulsion and I found the children took this much better. I may say that for the last six months I have had this oil in constant use, both in out-patient and in-patient practice, and have used it in all cases in which I considered cod-liver oil was indicated. The children who have taken it have, as a rule, done well and gained weight. Some children would not take it but I do not think this happened in any greater proportion of cases than occurs with cod-liver oil. Neither among the children in the wards nor among those in the out-patients have I seen any bad symptoms which could be attributed to the "detrimental qualities of fish oil" and I consider the preparation quite as beneficial as the oil obtained from the cod. It is almost unnecessary to add that the oil is not prescribed as oleum morrhuæ but as oleum clupeæ, the name being derived from the family of the pisces clupeidæ to which the pilchard belongs.

I am, Sirs, yours faithfully,

FREDERICK E. BATTEN,
Assistant Physician to the Hospital for Sick Children, Great Ormond-street.

May 9th, 1904.

THE METROPOLITAN STREET AMBULANCE ASSOCIATION.

To the Editors of THE LANCET.

SIRS,—May I be permitted so far to correct the account of the meeting of the Metropolitan Street Ambulance Association which appears in THE LANCET of May 7th as to say that the remarks attributed to "Dr. F. W. Cock" on the subject of the New York ambulance system were really made by Yours very faithfully,

E. MARION COX, M.D., L.S.A.

Curzon-street, W., May 9th, 1904.

REMOVAL OF THE OVARIES FOR INOPERABLE CANCER WITHOUT EFFECT.

To the Editors of THE LANCET.

SIRS,—It is of great importance that all cases of removal of the ovaries for inoperable cancer should be recorded with a view to establishing the value of this operation.

Early in June, 1903, a woman, aged 43 years, consulted me concerning a swelling in her breast which she had had for some months. It was a well advanced scirrhus of the left breast. I admitted her into hospital on June 12th and next day removed the breast, cleared out the axilla as thoroughly as it could be done, and gave her thyroid gland for some months. She left the hospital on July 1st, 1903, in good health, though I feared that I should have her return some day as the cancer was so far advanced before operation.

On Jan. 8th, 1904, she returned with many nodules along the cicatrix. I readmitted her into hospital, explained the state of the case to her, and with her consent on Jan. 9th removed the ovaries as her menstrual functions were perfectly regular, and again gave her thyroid gland. I also used the Roentgen rays twice a week. She left the hospital on Feb. 4th well in herself and living in hope that the operation would cure her cancer. I could never see (although she attended the hospital regularly as an out-patient and continued her thyroid gland) that the operation made any impression in even retarding the growth of the cancer and on April 21st, 1904, she died.

I am, Sirs, yours faithfully,

Rugby, May 9th, 1904. CLEMENT DUKES.

THE ASSOCIATION OF DIPLOMATES OF THE ROYAL COLLEGES OF PHYSICIANS AND SURGEONS OF EDINBURGH.

To the Editors of THE LANCET.

SIRS,—May I ask you for space in THE LANCET to state that the general meeting of the above association will be held at 20, Hanover-square, London, W., on Thursday, May 19th, at 4 P.M. Circulars are being sent to diplomates in London and the provinces but as some may not receive them will they kindly accept this as an invitation to attend?

I am, Sirs, yours faithfully,

C. ST. AUBYN-FARRER,
Westbourne Park-road, W., May 10th, 1904. President.

SOUTH AFRICAN CIVIL SURGEONS' FOURTH ANNUAL DINNER.

To the Editors of THE LANCET.

SIRS,—May I call attention in your columns to the above dinner which will take place on Tuesday, June 28th, at the Hotel Cecil at 7.30 P.M.? Mr. G. H. Makins, C.B., will take the chair. As the addresses of those who served in the war are frequently changing I take this opportunity of catching the civil surgeon's eye. Reply cards will be sent out to all whose names and addresses are at my disposal and I shall be glad to hear as soon as possible from those who intend to be present. Tickets (price 10*s.* 6*d.*) should be paid for at the dinner. There will be a plan of the table in the reception room and those dining can thereby secure seats to suit their convenience beforehand. Miniature medals and decorations should be worn and guests are welcome.

I am, Sirs, yours faithfully,

44, Welbeck-street, W., May 11th, 1904. C. GORDON WATSON

CASE OF ECLAMPSIA WITH TWINS.

To the Editors of THE LANCET.

SIRS,—Mr. A. H. Haines's case of eclampsia in THE LANCET of April 9th, p. 1017, reminds me of a case I attended some time back. The patient was a primipara, aged 21 years. On my arrival at the house I found her in convulsions which had been going on for eight hours. I prescribed bromide and chloral and sought the assistance of a friend, Mr. C. H. Thackrah of Halifax, and on our arrival at the house we found the convulsions were in no way abated by the drugs. After a short consultation we decided to empty the uterus under chloroform. The anæsthetic was taken well and when the patient was well under the os was dilated by digital means, the membranes were ruptured, and the forceps was applied to the presenting head. The child was a very small one and was easily delivered, but on placing my hand on the abdomen to follow down the uterus I found another child in the womb. My friend examined and found the presentation to be the right shoulder. A little more chloroform was used and he had no difficulty in getting hold of a leg and turning, delivery being very easy. The placentæ were separate, both children were born alive and lived. There was a good deal of post-partum hæmorrhage, but with external kneading of the abdomen the uterus was kept well contracted and no further hæmorrhage occurred. The patient got on very well until about the twelfth day when she complained of pain in the left groin and calf. Her temperature was 102° F. and the leg

began to swell. I treated the white leg with the general routine treatment and it got all right. Both children died in convulsions, one three weeks after birth and the other a month. I am, Sirs, yours faithfully,

ERNEST E. CROWTHER, L.R.C.P., L.R.C.S. Edin., &c.

Luddenden, May 10th, 1904.

LIFE IN CRYSTALS.

To the Editors of THE LANCET.

SIRS,—Acting on the principle expressed by the motto which heads your correspondence columns you recently afforded to Dr. H. Charlton Bastian an opportunity of expounding views on heterogenesis to which exception is very generally taken in scientific circles. In the same spirit may I call attention to an article by M. F. di Brazza and M. P. Pirenne in the *Revue Scientifique* of April 22nd, entitled "La Vie dans les Cristaux" which may be regarded as indirectly supplying some measure of confirmation to Dr. Bastian's opinions? The article referred to consists mainly of an exposition of the theories of M. von Schrön, director of the pathological institute of the University of Naples, as to the origin and mode of development of crystals, and the writers are led to the conclusion that they have to do with undoubted instances of the spontaneous generation of living things from aggregates of molecules. The living things are, it must be admitted, crystals, but M. von Schrön is convinced that young and growing crystals are alive though old ones may have ceased to be so, and he traces a marked analogy between crystals and the cells of animals and plants. He has watched the formation of crystals under a magnification of 800,000 and he describes the appearance from an initial "pétroplasme," which is comparable with the "bioplasm" of animals and plants, of "petro-cellules" with nuclei containing a nuclear network. The petro-cellules give rise to crystals and the young crystals have the power of locomotion and, like the lowest zoological or botanical types, can reproduce their kind by division, gemmation, and endogeny. The young crystal has also its special pathology and may exhibit hereditary maladies in the way of bifurcation, torsion, or erosion. M. von Schrön suggests that Redi's dictum, *Omne virum ex ove*, and Virchow's *Omnis cellula e cellula* call for revision and he proposes the formula *Omne virum e molecula* as more in accordance with the facts of the case. If these observations are verified the result can hardly fail to be curious and interesting. I am, Sirs, yours faithfully,

S.

THE CHOLERA AND ENTERIC FEVER EPIDEMICS AT HAMBURG.

To the Editors of THE LANCET.

SIRS,—Dr. Reincke writes to correct some statements made in your leading article on the paper which he recently read to the Epidemiological Society. As these statements were evidently based on the description which I wrote when visiting Hamburg to investigate the causes of the cholera[1] perhaps I may offer some explanation. I then described Altona as being built on a hill and that it juts out in a somewhat startling manner, so that it may well be compared to a rock or a cliff. I confess that I did not investigate the exact composition of the subsoil of this hill but Dr. Reincke now informs you that it consists of North-German geest, the same soil as that of the greater part of Hamburg. If reference is made to the map published with my article on Hamburg it will be seen that "the greater part of Hamburg" did not suffer half as much as the smaller part of Hamburg which is built on damp subsoil, marshy land recently redeemed from the river. Thus the topographical differences produced their effect, not only in regard to Altona as compared with Hamburg, but within the boundaries of Hamburg itself. The sanitary authorities, who showed me every courtesy, and I am pleased after the lapse of so many years to have another opportunity of again publicly thanking them, assured me that there was a low-lying and damp part of Altona where a good many cases of cholera had occurred. Whatever the composition of the subsoil these low-lying districts did suffer the most, but they are also the poorest and the most overcrowded and it is not one cause but many causes that bring about such an epidemic. Therefore, and in spite of the great importance of water-supply, these other causes must be carefully considered.

I am, Sirs, yours faithfully,

London, May 7th, 1904. YOUR SPECIAL CORRESPONDENT.

[1] THE LANCET, August 25th, 1894, p. 457.

THE GERMAN SURGICAL CONGRESS.[1]

(FROM OUR BERLIN CORRESPONDENT.)

(*Continued from p. 1309*)

Operations on the Bones and Joints.

Dr. SAMTER (Königsberg) recommended in old dislocations of the jaw the performance of operative reposition instead of by resection.

Professor RIEDEL (Jena) said that subcutaneous catgut sutures yielded the best results in recent and old fractures of the patella. He showed some patients who had been treated in this way and had excellent use of the knee joint.

Dr. BOCKENHEIMER (Berlin) showed a patient whose scapula had been removed and had afterwards undergone regeneration. For this to take place it was, of course, essential that the periosteum should be preserved. One of Dr. Bockenheimer's patients continued to follow his employment as an acrobat.

Dr. KÖNIG (Berlin) recommended suture of fractured bones, especially of the epiphysis; this proceeding was very valuable in cases of fracture-dislocation. He had used this method in 11 cases, one being that of a patient with several fractures. One patient had an intracapsular fracture of the neck of the femur in which accurate suture of the capsule was essential. The results were very satisfactory.

Dr. SAMTER mentioned a case of pseudo-arthrosis of the tibia where he had obtained consolidation by implanting a large periosteal flap and a piece of bone from the femur.

Professor VON BRAMANN (Halle) said that in a case of sarcoma of the humerus he had replaced the diaphysis by a sterilised piece of bone from the tibia six inches in length, the result being that complete consolidation was obtained.

Dr. NEUBER (Kiel) said that a piece of wood, which, of course, must be removed after a sufficient formation of bone had taken place, was likewise efficacious.

Operations on the Kidney.

Professor KÜMMELL (Hamburg) discussed tuberculosis of the kidneys. He recommended early operation as serious lesions of the kidney might sometimes be attended by only slight symptoms. In every case of old cystitis, especially in women, the urine should be examined as to the presence of tubercle bacilli; when those bacilli were present a radical operation should be performed as soon as possible; the results were generally good. Of 260 operations performed by him 48 were for tuberculosis.

Professor KRÖNLEIN (Zürich) confirmed Professor Kümmell's statement that tuberculosis of the kidneys was more frequent in women than in men. Since 1890 he had operated on 34 patients of whom 12 had no other symptoms of tuberculosis whilst in 32 there were multiple localisations of the disease. He was of opinion that an ascending form taking its origin from the bladder did not exist but that infection always occurred by way of the circulation.

Professor KÜSTER (Marburg) said that he had observed that the disease was more frequent in men than in women. Tubercle bacilli were not always present in the urine nor was their presence a sure symptom of renal tuberculosis.

Dr. STEINTHAL (Stuttgart) reported that he had once operated in two stages. At the first operation one of the ureters was tied and when by this proceeding the healthy state of one kidney was ascertained the other was removed by a second operation.

Appendicitis.

Dr. VON BÜNGNER (Hanau) read a paper on the size, structure, and shape of the appendix and discussed the methods available in the different forms of appendicitis. He distinguished an acute and a chronic form with many subdivisions. He generally insisted on early operation.

Dr. LAUENSTEIN (Hamburg) said that he dissented from the view held by Dr. Büngner to the effect that there existed

[1] For this report we wish to tender our thanks to the editor of the *Deutsche Medicinische Wochenschrift*, through whose courtesy it has been forwarded to us by our correspondent.—ED. L.

so many forms of appendicitis showing distinct symptoms. His classification of appendicitis was into acute and subacute or chronic with or without perforation. When the cases were operated on early there was no perforation.

Dr. KAREWSKI (Berlin) expressed the opinion that in acute cases an operation should be performed at once when medical treatment did not completely relieve the symptoms. Operation in the interval should also not be too long postponed.

Professor SONNENBURG (Berlin) insisted on the fact that opinions as to the necessity of an operation have naturally changed because the clinical material itself has changed on account of patients now presenting themselves at an earlier stage of the disease than formerly. The very acute forms of appendicitis with septic symptoms and the early stages of subacute peritonitis were now better known and surgical aid was thus sought at once. Professor Sonnenburg, however, did not advise early operation when the suppuration had no tendency to spread and when the symptoms nearly disappeared after some days.

Dr. FEDERMANN (Berlin) reported six cases of ileus following operation for appendicitis. The patients' temperature was normal; the pulse also was normal at first and only became frequent in an advanced stage. The number of leucocytes was normal or even subnormal and only increased when an abscess developed.

Hernia.

Professor MADELUNG read a paper on very large herniæ which frequently occurred after operations for strangulation or after unsuccessful radical operations. These cases were seldom improved by a simple operation; resection of the prolapsed portion of the intestine and suture were necessary.

Professor HELFERICH (Kiel) called attention to the fact that shock might ensue on the reposition of enormous herniæ.

Dr. KAUSCH (Breslau) expressed the opinion that these herniæ ought always to be operated on while the patient's general state was still satisfactory. Previously to the operation the patient must be confined to bed for several days with his pelvis raised so that the protruding intestines might tend to fall back.

Professsor BRAUN (Göttingen) said that these herniæ might be considerably reduced in size by elastic compression.

Dr. BRODNITZ (Frankfort) said that he had resumed the old method of Schwalbe—namely, the treatment of herniæ by injections of alcohol into the sac; he had treated 73 patients in that way of whom 45 had since been observed for more than six months. He found that of these 45 cases 19 were serious and four had relapses; ten milder cases and 16 herniæ in children were completely cured.

Operations on the Bladder.

Professor REHN (Frankfort) reported recent observations on growths of the bladder in workmen employed in aniline factories. A report of such cases had been already given by him at the congress last year. He proposed a collective investigation of the matter, the number of his own observations now being 23; five were papillomata, of which two afterwards degenerated into malignant growths; the others were originally sarcoma or cancer. The prognosis was very bad.

Dr. SCHWERIN (Hoechst) surgeon to the Hoechster Farbwerke, said that his attempts to produce such growths in animals by adding aniline to their food had failed; in the human subject the development of these tumours was very slow.

Dr. STRAUSS (Frankfort) said that he had once operated on a large benign fibroma of the bladder with a small peduncle; besides that fibroma there was a small indurated growth which was ascertained to be a cancer.

Professor KRASKE (Freiburg) mentioned some rare cases of vesical growths—namely, a myoma which was cured by partial excision, and an ulcerated gumma cured by anti-syphilitic treatment.

Dr. PAGENSTECHER (Wiesbaden) spoke on malformations of the bladder such as the bladder of hour-glass shape; the double bladder, each loculus containing one ureter and associated as a rule with other deformities; and diverticula of the bladder, cases of which last abnormality he had had under his own care.

Intraspinal Injections of Cocaine.

Dr. KLAPP read a paper on experiments made on animals for the purpose of preventing the rapid absorption of the fluid in intraspinal injections of cocaine. He found the action of adrenalin to be very unsatisfactory, whilst mucilaginous, oleaginous, and gelatinous solutions or emulsions were better.

At the general meeting of the German Surgical Association Professor KRÖNLEIN of Zürich was elected president of the next congress.

LATIN-AMERICAN MEDICAL CONGRESS AT BUENOS AYRES.

(FROM OUR SPECIAL CORRESPONDENT.)

[OUR Special Correspondent sent us photographs of the exhibition building at Buenos Ayres, of the building of the Faculty of Medicine, and of the San Roque and Isolation Hospitals, which were published with a preliminary note in our issue of April 23rd, p. 1155.]

IMPORTANT DEBATE ON YELLOW FEVER.

The Second International (Latin-American) Medical Congress was opened at Buenos Ayres with great *éclat* by President Roca in person. The inaugural ceremony took place in the Opera House, a handsome building, which was packed on the occasion, some 2000 people being present. On the stage, which was carpeted and artistically decorated with flowers and evergreens, were the President of the Republic, the Ministers of Public Instruction and Foreign Affairs, the members of the organising committee, the press, and the foreign delegates, numbering over 40, from the different South American republics and also from Mexico and Cuba. After the usual formalities had been gone through the foreign delegates in turn spoke for their respective Governments and each vied with the other in eulogy of the country, the great and beautiful city, and the energy displayed by the organising committee—a display of oratory well worth listening to. As is usual in Latin countries all were in full evening dress and white tie although the meeting was at 3 o'clock in the afternoon.

In the evening at 9 o'clock of the same day the Exhibition of Hygiene, which is being held in connexion with the Congress, was officially inaugurated and promises to be not the least interesting part of the Congress. The installations of the exhibition not being all completed it is not yet possible to give an exact and full description, but I may say that the display made by the Army Service Corps (*Sanidad Militar*) is most complete and very interesting and I doubt if in any European capital this department would be better represented. Many of the things are made by Lefévre of Paris, notably a cart filter with a capacity of 600 litres. At the back of the cart is the filtering apparatus (asbestos and charcoal) and a long inch hose conveys the water from any well or lake or puddle by means of a pneumatic pump to the filter from which the water issues perfectly clear and is conveyed by another smaller hose to the tank which occupies the rest of the cart which is drawn by two horses. I was much struck by the ease and rapidity with which the water was obtained and filtered. A fine portable camp oven for baking bread made in sections like a collapsable boat also drew my attention. Novelties in the shape of saddles for cargo mules, stretchers, and portable sterilisers for surgical instruments also call for notice. Some very creditable work was also apparent in aseptic furniture for hospital operating theatres and consulting rooms and there were some very fair specimens of surgical instruments all manufactured in Buenos Ayres. With one or two exceptions British manufacturers are conspicuous by their absence with regard to sanitary fittings, furniture, surgical instruments, and the like, but Messrs. Allen and Hanburys have a good show of infant foods and pharmaceutical preparations; Messrs. Brand and Co. and the Sanitas Co. are also represented but not fully. The place simply teems with French and German pharmaceutical specialities, especially French, while the show of mineral waters is a good one, "Taunus," "Kristalz," and "Birresbora" being all well represented.

Turning to the Medical Congress itself the most important paper read as yet (the Congress is still proceeding) is one on the International Prophylaxis of Yellow Fever, by Dr. J. B. Lacerda and Dr. Azevedo Sodré of Rio Janeiro, Brazil, and the following are their conclusions: 1. Yellow

fever is transmitted by means of the mosquito stegomyia fasciata which infects by the blood sucked from a yellow fever patient during the first three days of the disease. 2. The prophylaxis of yellow fever should tend to protect patients against the bites of mosquitoes and prevent the latter when infected from biting healthy persons. 3. All the old prophylactic measures such as quarantine, disinfections, cordons sanitaires, obligatory isolations, &c., should be abolished as illusory, inefficacious, and prejudicial.

These conclusions are also supported by Dr. William Dolz y Arango of Cuba, and Dr. Sodré proved that, working on the above lines, they are in a position to state that yellow fever had almost disappeared from Rio Janeiro. So much enthusiasm was provoked by these assertions that the Congress there and then resolved to send congratulatory telegrams to Dr. Octavio Cruz, chief of the sanitary service of Rio, and to Dr. Agramante and Dr. Carrol of the United States for their work in connexion with yellow fever. The contrary side was taken by Dr. Penna, chief of the isolation hospitals in Buenos Ayres, who sustained the following propositions: 1. The results of the studies of Dr. Sanarelli on the etiology and pathogeny of yellow fever have not suffered the slightest modification and may be considered at the present time as perfectly established. 2. These investigations have been confirmed in France, Italy, Brazil, and in the Argentine. 3. The conclusions arrived at by the United States military committee that the mosquito stegomyia fasciata serves as intermediate host between the yellow fever patient and the healthy individual have not been demonstrated and lack sufficient proof. 4. The counter proof of specific prophylaxis made in Cuba and San Paulo (Brazil) by destruction of the specific mosquito is not conclusive (insufficient). 5. The Havana committee has not proved that the disease transmitted experimentally by the mosquito is really yellow fever and the same applies to the French committee. 6. The prophylaxis of yellow fever should be conducted on the old system of disinfection and isolation. 7. International prophylaxis of yellow fever should suppress all measures tending to interrupt free commercial and individual traffic. 8. If it be true that the transmission of yellow fever is made by a mosquito of a certain species and that the statistics of the results obtained by artificial transmission of yellow fever are also true, then the means adopted for prophylaxis should not be "death to the mosquito" but preservation of these providential beings destined to act in the necessary cases as "immunisers" exactly as we preserve and utilise vaccination.

The last conclusion is of considerable interest and many speeches were made for and against, but no vote was taken as the subject possibly may be discussed afresh. Some good work was done in other sections but I must postpone the mention of these for a later date.

Buenos Ayres.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Liverpool Cancer Research.

Dr. A. S. F. Grünbaum, the director of the Liverpool cancer research, has issued his report of the first year's work of investigation for the discovery, if possible, of the causes and cure of cancer. The plan of work adopted was (*a*) therapeutical and (*b*) experimental. The cytolytic milk of a cow and subsequently, when it yielded no more milk, its serum were tried. It was expected that it would have effect only on cancer of the breast but it was tried also on two cases of cancer of the stomach and one of the rectum. In one case of cancer of the stomach the milk was taken constantly until death; the other two patients did not continue to send for it so that their subsequent history is not known. Of two cases of cancer of the breast in one the disease is apparently arrested; the other, in which the disease was too far advanced, died. Three cases of uterine cancer are being treated with the serum from a horse; they all show objective signs of improvement. It is, of course, obvious that while surgical interference is considered the most hopeful treatment any new method tried only on cases beyond surgical skill will be severely handicapped. Of the value of the x rays as a curative agent in certain cases there can be no doubt but at the present moment the clinical and pathological characteristics of such cases are not defined and require minute investigation. Experimental work has been directed towards the causes of cancer. Until these are known very little can be done towards its cure and practically nothing towards its prevention. If once a strain of human cancer can be experimentally secured and continued the goal will be appreciably nearer. In carrying on the work the developmental and the parasitic hypotheses have consequently been kept in view. The recent additional evidence obtained by the London observers towards the germinal theory raises the hope that a comparatively simple physiological cure may be possible when it is remembered by what simple means experimental embryologists are able to alter the development of germinal cells. The occurrence of malignant disease in animals also came under investigation. A number of tumours from the human body were received in response to appeals made by Dr. Grünbaum to his professional brethren for specimens: about 57 per cent. came from the Liverpool Royal Infirmary, 16 per cent. from the London Hospital, 1 per cent. from the Royal Southern Hospital, and 26 per cent. from outside sources. Several tumours, mostly malignant, from animals have been received and examined; they include specimens from the horse, the cow, the sheep, the dog, the pig, the cat, the mouse, and the trout. The report practically includes only nine month's work to Feb. 1st, 1904, as the rooms in the laboratory of experimental medicine at the University of Liverpool were not ready until April, 1903.

The Roentgen Rays Department at the Royal Southern Hospital.

Through the liberality of Mr. John W. Hughes the x-ray room at the Royal Southern Hospital has been enlarged and fully equipped with the most up-to-date scientific apparatus. A few days since the new room was formally opened by Mrs. Hughes, the wife of the donor, in the presence of the honorary medical staff and several members of the general committee. Immediately afterwards Mr. C. Thurstan Holland, the honorary medical officer of the x-ray department, gave a demonstration on radium to an appreciative audience.

Health of Liverpool.

The death-rate for the past week was 22·3 per 1000. Three cases of small-pox were reported during the past week. There are 320 cases of scarlet fever in the corporation hospitals.

Death of Alderman John Lawrence, J.P.

By the death of Alderman John Lawrence the medical profession of Liverpool has lost a warm friend. He was a man of great abilities for business and public affairs and was especially interested in hospital administration. He was a prominent member of the committee of the Royal Infirmary since the year 1881; he was also a member of the council of the University of Liverpool as a civic representative. During the rebuilding of the Royal Infirmary his advice on legal matters, especially in reference to the purchase and the acquisition of neighbouring property, was invaluable. He also took a great interest in the subject of the renewal of the lease of the Medical Institution buildings, which has nearly run out and which is now a source of much anxiety to the trustees of the institution. At a general meeting of the society two months ago, at which he was specially invited to be present, he strongly expressed the opinion that as the objects of the institution were for the cultivation of medicine, surgery, and the collateral branches of science, thus tending to benefit society in general, a nominal fine ought to meet the circumstances of the case. His help was looked forward to when the matter would again come before the estate committee of the city council but it was decreed otherwise. He was a man of wide culture and possessed a charm of manner which made him a general favourite. His death occurred in pathetic circumstances, the intelligence of which came as a great shock to his numerous medical friends and others. He left Liverpool on March 31st, not specially ailing but in the hope that a trip to the Mediterranean would be of benefit after having somewhat overworked. He visited Constantinople, Smyrna, and Athens but, unfortunately, when nearing Gibraltar developed pneumonia, to which he succumbed in two days. He passed away on Sunday, April 24th, and was buried at sea on the following day. Mr. Lawrence, who was a solicitor, was brother-in-law of Mr. T. Pickering Pick, consulting surgeon to St. George's Hospital, London, and inspector of anatomy for England and Wales.

Liverpool Baths and Washhouses: Opening of a New Bath.

The new public bath in Lister Drive was formally opened

on May 2nd. The building is a very imposing one. The style of architecture is Free Renaissance and has a very pleasing effect. After passing the turnstile the visitor finds himself in a very commodious entrance hall, from which there is direct access to the several sections and classes of baths which are all situated on one floor level. Each section has its waiting and cooling rooms. The first-class accommodation provides for eight private baths, slippers, sprays, Russian and vapour baths, and a swimming bath 75 feet by 35 feet, with dressing accommodation for from 75 to 100 bathers. This bath is designed for an entertainment bath but for the present the necessary spectators' gallery has been omitted. This feature can be added later. The ladies' section is capable of accommodating six bathers. Space has been reserved for the construction of a ladies' swimming bath when the demand justifies such a provision. A large bicycle stable is provided for the storage of bathers' bicycles. There is also a large room for swimming-club meetings. The administrative department includes a power-driven laundry and complete installation of up-to-date heating appliances both for atmospheric and water heating. The whole of the baths are top lighted. The artificial lighting is electric, the current being supplied from the corporation mains. The ventilation is natural. The construction of the building is fire-proof. The interior of the walls is faced with enamelled bricks and tiles. The water-supply is from the corporation fresh-water mains, and by the coöperation of the water and the electric-power and lighting committees the baths committee has been enabled to make arrangements for the supply of fresh water for the swimming baths to be heated on its way to the baths in the following manner. A special supply of water is taken from the corporation main and is conducted in pipes to the electric generating section adjoining the baths, where it is passed through a specially designed heater placed in one of the exhaust steam mains of the station. The water heated to a suitable temperature for bathing purposes is then conveyed in pipes to the baths. In testing the heater it was found capable of heating 25,000 gallons of water per hour, raising the temperature from 43° to 73° F. This can be done without in any way affecting the water and electric-lighting committee's revenue, whilst it means a saving of at least £140 per annum to the baths committee. The total cost of the establishment of the baths is £24,000.

The Royal College of Physicians of London.

Dr. T. R. Bradshaw, honorary physician to the Royal Infirmary and lecturer on clinical medicine at the University of Liverpool, has been elected to the Fellowship of the Royal College of Physicians of London.

May 10th.

WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

Poor-law Conference at Malvern.

THE thirty-fifth annual conference of delegates from the 82 unions in the West Midland registration district was held at Malvern on May 2nd and 3rd. The area included in this registration district comprises the counties of Gloucester, Hereford, Salop, Stafford, Warwick, and Worcester. A very instructive discussion was introduced by Mr. J. D. Birchall of the Gloucester board of guardians upon "boarding out." He compared the advantages to the children themselves as well as to the ratepayers of placing children in scattered homes, in cottage homes, and of boarding them out in families both within the union to which the child is chargeable and in other unions. He emphatically recommended the adoption of the last-named course—namely, the placing of children "beyond the union" and deplored the fact that the number of children thus dealt with in 1900 being 1910 in 1903 it had fallen to 1674 although the total number of children chargeable to the unions had increased between the two dates from 57,453 to 61,993. There was a consensus of opinion among those who took part in the discussion that the children should not be kept in the workhouse proper but there was not the same unanimity with regard to placing them in groups in cottage homes or in scattered houses and boarding them out singly. Mr. E. B. Wethered, Poor-law inspector of the Local Government Board, said that everything depended upon proper supervision. He declared that the boarding-out system had worked very well at Bristol and that since the children had been removed from the workhouse they had developed both mentally and physically. Miss Mason, who is also a Poor-law inspector of the Local Government Board, agreed with Mr. Wethered that there was a great difficulty in finding suitable homes in which to place children. At the second day's meeting of the conference Mr. Geoffrey Drage read a paper upon Training Ships for Poor-law Boys. He pointed out that while in 1857 there were 97,000 British subjects employed in the mercantile marine and in 1899 there were 60,000 in 1901 there were only 44,500, and he suggested that boards of guardians by sending boys to a training ship would be doing the best thing possible for the boys and at the same time would be contributing to the nation's prosperity and safety.

Disinfection after Death from Phthisis.

Now that phthisis is recognised as an infectious disease it is probable that the keepers of lodging houses will more frequently exact payment for the disinfection of rooms occupied by phthisical patients. Such a claim was unsuccessfully defended in the Cardiff county court on May 5th. A lady who was suffering from phthisis occupied with her companion certain lodgings in Cardiff during the whole of last November and died at the end of that month. The proprietor of the lodgings claimed £50 from the husband of the patient as damages said to have been sustained owing to the occupation of the lodgings by his wife and to her subsequent death. Nearly half of this sum was for the rent of rooms which it was alleged certain persons refused to hire when they heard the cause of the previous lodger's death. The remainder was for the wear and tear of the house at the time of the funeral and for the value of bedding and other articles which had been destroyed. The county-court judge gave judgment in favour of the lodging-house keeper for £25 but would not entertain the claim for loss of rent. A somewhat similar case has been previously reported[1] where the cost of disinfecting rooms occupied by a consumptive person in a hotel was recovered in a county court. In this instance the judge held that on the evidence of the medical officer of health consumption is an infectious disease and that it would be dangerous to let the rooms again without disinfection. He did not, however, allow the claim made for damages in addition to the cost of disinfection.

Damages against a Quack Company.

A commercial traveller obtained £20 as damages in the Cardiff county court on May 5th against the Good Health Alliance Company. He purchased two "foot drafts," a form of plaster which it was said would relieve rheumatism but he contended that owing to the irritation which they set up on the soles of his feet where they were applied he was unable to follow his employment. Mr. Frederick Buckham, who attended him, ridiculed the suggestion of the defendant company that the "foot drafts" drew uric acid out of the system through the pores of the feet, but according to the newspaper report of the case Dr. Boyd, who was described as a London consulting physician, said that a good deal of the uric acid could be expelled from the body through the pores of the skin and that was what the plasters did. The county-court judge said that the company was liable for damages as the plaintiff had not been warned in any way as to the effect which the plaster might have.

Tramps and Small-pox.

The Leominster board of guardians recently adopted a motion expressing the opinion that it is urgently necessary to pass through Parliament a short Bill compelling all tramps to be vaccinated if they cannot produce evidence of recent vaccination. During some months of last year the public vaccinator was instructed to offer vaccination to all tramps who passed through the Leominster workhouse and in this way a great deal of good work was done. The board becoming alarmed at the cost involved the practice was suddenly dropped.

Royal Mineral Water Hospital, Bath.

At the annual court of governors of the Royal Mineral Water Hospital, Bath, which was held on May 2nd, it was stated that the hospital was closed for a few weeks during 1903 in consequence of a slight outbreak of small-pox in the town. The hospital, which was incorporated in

[1] Law Times, 1899, vol. cvii., p. 101.

1737, contains 165 beds and there were admitted for treatment last year 1153 patients, of whom 1027 were discharged during the year; of the latter number 84 were cured, 871 were much relieved, and three died; the remainder left for various reasons. The expenditure incurred during the year was £5343, or £444 in excess of the income.

Swansea Hospital.

Among many other charitable bequests of the late Mr. William Williams of Swansea is a munificent one of £2000 to found and to maintain a bed in the Swansea General Hospital. Dr. J. Arnallt Jones, medical officer of health of Aberavon, is a son-in-law of Mr. Williams.

The Vaccination Acts.

At the meeting of the Exeter guardians held on May 3rd a communication was read from the Reading union asking support to a petition to Parliament for the repeal of the Vaccination Acts and the rejection of the Vaccination Bill of 1904 on the ground that vaccination was dangerous to life and limb and useless to prevent the infection of small-pox. The Exeter guardians, however, decided to take no action in the matter.

May 10th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

General Council of the University of Edinburgh.

THE statutory half-yearly meeting of this body was held on May 4th. There were no matters of distinctively medical interest before the meeting. A committee was appointed to watch the progress of the Education Bill and a discussion took place on the merits of modern languages.

Lunacy in Scotland.

The annual report by the General Board of Commissioners in Lunacy for Scotland, which has just been issued, states that on Jan. 1st, 1904, there were in Scotland 16,894 insane persons under official observation. This number included inmates of schools for imbecile children and of the lunatic department of Perth General Prison. Of the total number, 2532 were maintained from private sources, 14,309 by parochial rates, and 53 at the expense of the State. The total showed an increase of 236 over the numbers of the previous year. When the Commissioners first took up office on Jan. 1st, 1858, the total number of lunatics officially known had been 5824, or 11,070 less than the numbers reported on Jan. 1st, 1904. The numbers of private patients in asylums had increased during the year by 111 and in private dwellings had decreased by two, an increase of 109 in all. The number of pauper patients in establishments had increased during the year by 80. This figure did not include inmates of training schools. As, however, the average annual increase of pauper patients in establishments had been 293 during the past ten years the increase for last year was 213 below the average. The number of pauper lunatics in private dwellings had increased during the last ten years from 2566 to 2658. Of registered lunacy as a whole the increase of 205 was the smallest increase recorded since 1891. Of the total increase of 205, 191 rose from an increase in the number in establishments and of this number 80 were pauper patients. This increase in pauper patients was the smallest that had occurred during the past 19 years. 16 counties show a total increase of 178 and the remaining 17 counties a total decrease of 98. The most prominent contribution to the increase was the county of Edinburgh with 48, or 27 per cent. of the whole. Inverness, Ross, and Sutherland showed together an increase of 41, or 23 per cent. of the whole. Aberdeen and Renfrew showed an increase of 29, or 17 per cent.; while Forfar with a growing population showed 21 fewer than last year. Lanark, Linlithgow, Dumbarton, Selkirk, as well as Caithness, Orkney, and Shetland, all showed a decrease. The number of pauper lunatics in establishments now amounted to 249 per 100,000 of the population, as against 250 per 100,000 in 1892. 21 years had elapsed since a similar fall had been recorded. It might be merely a passing phenomenon but it also possibly might be an indication that pauper lunacy, which had lately been so rapidly increasing, was at last reaching a point beyond which it would not materially rise.

University of Glasgow Court.

At a meeting of the University of Glasgow Court held at Gilmorehill on May 5th, Principal Story presiding, the finance committee reported that it had agreed to purchase from Mr. Alexander Stenhouse certain property in University Avenue, consisting of dwelling houses and shops with hall adjoining, at the price of £3800, subject to the court granting the vendor a lease of the shops for four years from Martinmas next. The report was adopted. This property is at present partly occupied by the Western Medical School. Lord Kelvin, who was recently appointed Chancellor of the University in room of the late Earl of Stair, has nominated Mr. Henry Gordon of Aikenhead as his representative on the University of Glasgow Court.

Annual Meeting of the Aberdeen District Registered Plumbers.

The annual meeting of the Aberdeen, Kincardine, and Banff district plumbers, registered by the National Registration of Plumbers, was held on May 4th in Robert Gordon's College, Aberdeen, Professor Matthew Hay, president, being in the chair. There was a good attendance. The fourteenth annual report submitted by the council stated that the plumbing classes carried on at Robert Gordon's College by Mr. W. A. Watt and Mr. A. Forbes, members of the council, continued to do excellent work, and the instruction and training which they afforded must have an important bearing on the qualifications of young plumbers who had the foresight to attend them during their apprenticeship. The number of students in attendance during the session was 43. The classes were arranged in three different grades of proficiency. A special feature was instruction in "lead burning"—a part of plumbing work hitherto confined to a very small section of the craft. Ex-Bailie Pyper had kindly renewed his generous donation of prizes, but the awards would not be announced till the end of the session. A balance of £15 1*s.* 6*d.* remained in hand after paying all accounts of the registration. Professor Hay commented on the satisfactory state of affairs and moved the adoption of the report. Councillor Robertson, vice-president, seconded the motion and the report was unanimously adopted. Both of these gentlemen referred to the Plumbers' Registration Bill and hoped that at no distant date they would see compulsory registration of plumbers. The following motion was proposed by Mr. John Clarke, lecturer on education at the University of Aberdeen, and was unanimously passed:—

That the annual meeting of plumbers registered by the Aberdeen and district council for the National Registration of Plumbers records its emphatic opinion that the time has arrived when the voluntary system of registration of plumbers carried on in Aberdeen and in the other large centres of population in the United Kingdom by the joint action of the public authorities and the plumbers should be placed on a statutory basis, on lines already approved by the Local Government Board, in the interests of the public health and economy, and that such legislation is a necessary adjunct to the powers already exercised by sanitary authorities and the water undertakings of the kingdom, and resolves to transmit a copy of this resolution to the Prime Minister, the President of the Local Government Board, and the local Members of Parliament.

Tragic Death of a Stonehaven Medical Man.

The body of Dr. James Gordon of Stonehaven was found by two lads on May 8th suspended by a rope from a tree in a wood at Carsegownie Muir, about five miles from Forfar. Dr. Gordon succeeded to the late Dr. W. B. Leslie's practice in Stonehaven some two years ago. He was a native of Aberdeen and graduated with distinction at the University of Aberdeen. Deceased was, in not a few respects, a young man of great promise. After graduating he spent some time in practice in Aberdeenshire and in England and Wales, gradually building up a considerable reputation and sound knowledge of his profession. He was unmarried. The utmost sympathy is expressed for his father and mother and other relatives in the painful circumstances which have attended their sad bereavement.

May 10th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Meath Hospital and County Dublin Infirmary.

Dr. F. Conway Dwyer, professor of surgery, Royal College of Surgeons in Ireland, and surgeon to Jervis-street Hospital, has been appointed surgeon to the Meath Hospital and County Dublin Infirmary.

Cork-street Fever Hospital, Dublin.

The James Weir Nurses' Home in connexion with the

Cork-street Fever Hospital was opened on May 7th by his Excellency the Lord Lieutenant who delivered an interesting address on the occasion.

The Westmorland Lock Hospital, Dublin.

Mr. George E. P. Meldon has been appointed surgeon to the Westmorland Lock Hospital, in succession to Mr. M. A. Donnelly, recently deceased.

Sanitary State of Lisburn.

The medical inspector of the Local Government Board (Dr. C. J. Clibborn) has drawn attention to the fact that no inspector of dairies, cowsheds, and milkshops has been appointed in Lisburn and the Local Government Board advises the Lisburn urban council to adopt a code of regulations for these places. It is reported that the sewerage of the town is defective and the Local Government Board advises steps to be taken to have maps of the sewerage system completed as soon as possible. A properly equipped disinfecting apparatus for use in the district is much needed as 66 cases of infectious disease (38 of scarlet fever, 10 of erysipelas, 16 of enteric fever, and two of diphtheria) were noted during the year.

Newry Fever Hospital.

At the annual meeting of the friends of this charity, held on May 6th, it was reported that the public subscriptions for the year were £310 9*s.* which with the county council grant of £400 make the annual income £710 9*s.* It takes £800 a year to maintain the hospital and at the end of 1903 there was a balance due to the bank of £182 17*s.* The county council proposes to reduce the grant per annum to £300 and when this is done, unless the public come forward with a generous and hearty support, the operations of this most deserving hospital will have to be curtailed largely.

Derry Eye, Ear, and Throat Hospital.

In place of the late Mr. E. Donaldson, former surgeon to this hospital, two appointments have been made—Dr. W. B. Hunter and Dr. G. K. Smiley.

Medical Relief in Coleraine Union.

Dr. H. S. Morrison, medical officer of Aghadowey dispensary district, has pointed out to the Coleraine guardians that in his district he had to attend on red ticket shopkeepers, tradesmen, dealers, road contractors, and millowners, and in two cases he had to attend on families who had a credit account in the bank of over £500. He had since the beginning of the year 250 new cases in the dispensary, many of which were unnecessary and would not have occurred if the people were farmers and had to pay. In reference to this the Local Government Board wrote that in order to enable the issuers of tickets to be in a position to judge whether applicants for medical relief are or are not "poor persons" the board of guardians may invite each of their medical officers to furnish in writing a scale of charges for attendance upon persons whose circumstances would not admit of their paying the medical man's usual fees. A special form of ticket, different in colour and wording from the medical relief tickets, has been adopted in some unions. It was decided by the Coleraine guardians to consider the question at a general meeting to be held in a fortnight.

May 10th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Alternate Administration of Arsenic and of Sulphate of Quinine in Malaria.

AT the meeting of the Therapeutical Society held on April 27th M. Goldsmidt read a paper pointing out that arsenic would act favourably in cases of malaria where quinine failed and *vice versâ*. If, for instance, an attack of malarial fever would not yield to sulphate of quinine or to arsenic given in the second place it was almost sure to yield to a second dose of quinine given after the arsenic. The use of arsenic consecutively to sulphate of quinine had been found successful in intermittent affections other than malarial fever. More than 30 years ago M. Goldsmidt had cured in this way a young girl who suffered from intermittent attacks of torticollis. As regards the various preparations of arsenic he considered that arrhenal had manifest advantages over arsenious acid, especially from the point of view of its lesser degree of toxicity which rendered it easier to employ subcutaneously. But it remains to be seen whether the results obtained with arrhenal are better than those obtained with arsenious acid.

Antivenomous Sera.

M. Calmette of Lille, who has just been elected a corresponding member of the Institute, read an important paper on May 5th before the Academy of Medicine upon the above subject. As is well known, the discovery of antivenomous serum is due to M. Calmette. But on continuing his researches he found that the venoms of different serpents were not all of the same type. There are two main species to which all the others conform, cobra venom and viperine venom. The first is especially toxic, the second produces hæmorrhages. M. Calmette has succeeded in preparing one polyvalent serum which acts equally well in both kinds of poisoning. By studying the action of the neurotoxins which serpent venom contains upon the globules of the blood and upon gelatin M. Calmette has devised a method for standardising the toxicity of venom with accuracy.

Death of M. Duclaux.

M. Duclaux, the director of the Pasteur Institute, died on May 3rd from a seventh attack of apoplexy. M. Duclaux was foremost among men of science and his researches upon milk, amongst others, were a direct continuation of the work of his old master, Pasteur.

The Voices of Deaf-Mutes.

M. Marge has for some time past obtained remarkable results in the education of the voices of deaf-mutes by the use of sirens and tuning forks. In this way he makes the patients appreciate the sounds for the obtaining of the enunciation of which he has shown them how their lips and cheeks should be placed. On April 26th he gave a demonstration at the Academy of Medicine upon the pronunciation of the vowels. As a matter of fact, every vowel has more than one sound and hitherto patients have been taught the same method of emission for the "a" sound, whether short or long, or the "e" sound, whether mute or "é." By employing sirens in a new fashion and by accustoming the patient to sing a given note in unison with the siren until he mastered how to dispose his vocalising organs in conformity with the sound perfection has been nearly attained.

French Congress of Climatotherapy and Hygiene in Towns.

The first French Congress of Climatotherapy and Hygiene of Towns was held at Nice from April 4th to 9th, the subjects discussed being practically the same as stated in the preliminary announcement published in THE LANCET of Jan. 2nd, p. 44. Discussions were held and papers were read on April 5th, 6th, 7th, and 9th, the work beginning at 8 A.M. each day. Each afternoon, and the whole of April 8th, were occupied in excursions and the evenings were devoted to fêtes, receptions, or operatic performances. The Congress was in every respect a great success. The attendance exceeded 1000 and the arrangements were excellent not only with regard to the business of the sections but also in respect of the excursions and the various festivities. The bulk of the members were naturally Frenchmen, with whom there were a few Belgians, Italians, and Swedes. The British contingent was unexpectedly small, only two names of English medical men appearing on the list. Mr. S. Osborn, F.R.C.S., was present and Dr. I. Burney Yeo (London) read a paper entitled "Les Auxiliaires de la Climatothérapie."

Musical Expression in a Condition of Hypnosis.

A hypnotic subject named Madame Magdeleine has just been giving in public certain exhibitions of a very curious and quite individual character. Madame Magdeleine, who is obviously of a hysterical nature, possesses the property common to all persons like herself of being able vividly to express while in a state of hypnosis the emotions which correspond to auditory impressions which she receives. She recently gave an exhibition at the Théâtre des Mathurins before the Association of the Medical Press. When thrown into the hypnotic state by M. Paul Magnin, Madame Magdeleine, as soon as she heard the music, appeared to attune herself to the instrument and translated into terms of the most expressive mimicry the various symptoms which the music expressed. By impassioned gestures, by joyous dances, or by attitudes of sorrow she gave a picture of emotions which even professional actors were obliged to say were very remarkable. Selections from the works of Beethoven, Chopin, Massenet, and of Schumann, when played before her called forth on

her part the most artistic interpretation. When, however, the pianist improvised so that Madame Magdeleine could not have known anything about the music her expression and the richness of her improvisation were just as good as when music which she might have known was played and this test obviously did away with all idea of trickery. When awakened from the hypnotic state she is an intelligent and amiable woman but one quite incapable of reproducing the same passion and emotions which she experiences while in the hypnotic state. After the *séance* Dr. Berillon, who was present, pointed out that such phenomena have been known in a general way for a long time past to hypnologists, but that Madame Magdeleine exhibited a receptivity altogether out of the ordinary for auditory impressions and was able to give expression to them in a most exceptional way which was both interesting and artistic.

May 10th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Epidemics and the German Red Cross Association.

RECENT legislation requires towns and rural districts to make certain arrangements in the event of epidemics occurring. For instance, the families of patients must be isolated in special premises and patients' clothing which it may have been found necessary to destroy must be replaced. Apparatus for disinfection must be provided and any loss or damage inflicted on individuals by processes of disinfection must be made good at the public expense. The smaller towns will obviously have some difficulty in complying with these requirements and it is therefore satisfactory that the German Red Cross Association, in return for an annual sum to be paid to it by the public authorities of the places concerned, has proposed to assume the duties imposed by the law on the smaller towns and rural districts. The system is, in fact, a kind of mutual insurance of the small communities against the expenses of epidemics. It is proposed that communities of fewer than 1000 inhabitants shall pay only 5 marks (i.e., 5*s*.) a year. As there are in Prussia 48,993 towns, villages, and districts of fewer than 1000 inhabitants and 3688 having from 1000 to 5000 inhabitants a considerable sum will evidently be collected every year in this way. Of this money a certain portion is to be spent every year in providing portable huts, tents, apparatus for disinfection, clothing, and other requisites which are to be kept in the stores of the association and conveyed when required to the places where epidemics have broken out. The committee of the association hopes to be able in a few years to meet all the wants of the rural towns, provided that a sufficient number of communities accept those proposals.

The Hygiene of Health Resorts.

At a recent meeting of the Association of Government Medical Officers one of the subjects discussed was the hygiene of spas and health resorts and finally a series of definite recommendations was made, of which the following is an abstract. A sanitary commission ought to be formed in every spa and health resort. The notification of scarlet fever, measles, diphtheria, enteric fever, and phthisis ought to be made compulsory. In the smaller spas and health resorts, where there is no hospital, arrangements ought to be made with a hospital of the neighbourhood for the reception of patients, especially those suffering from contagious diseases. Ambulances and premises for the isolation of doubtful cases ought to be provided in every spa. The medical officers of health should be authorised to inspect the hygienic arrangements of dwelling houses and places of public resort at least once a year during the bathing season and to order unsatisfactory conditions to be corrected. In the ensuing discussion Dr. Behrend of Colberg rightly observed that not only the spa but also the public had obligations to fulfil in the interests of the general welfare; he especially drew attention to the fact that parents took their children when suffering from whooping-cough to crowded spas, although these children as a rule did not derive the least benefit from the change and were a source of danger to the healthy children whom they met there.

Blindness and Deaf-mutism.

The number of the blind has been continually decreasing in Prussia since 1871. According to the *Statistical Correspondence*, quoted in the *Vossische Zeitung*, there were 92·09 blind persons in each 100,000 of the population in 1871, 82·49 in 1880, and 61·04 in 1900. With respect to sex, the proportions of blind persons were 65·13 males and 58·56 females in each 100,000. Whilst in 1871 the number of blind females (11,759) exceeded that of the males (10,931), the proportions were reversed in 1900, when 10,302 blind females and 11,504 blind males were registered. The report also gives particulars relative to deaf-mutes, of whom there were 24,027 in 1871 and 31,278 in 1900. Although their absolute number has increased the proportion of the deaf-mutes to the general population has somewhat decreased, being 97·51 in each 100,000 in the year 1871 and 90·73 in the year 1900. More than 50 per cent. (16,856) of the deaf-mutes were able to work, upwards of 6000 being employed in agriculture and upwards of 5000 in various trades. It was rather remarkable that the decrease occurred only in the male sex, the females showing even a slight increase.

May 9th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Experiments on Feeding.

ON April 20th a paper was read before the National Academy of Sciences describing a series of experiments recently carried out by the Sheffield Scientific School of Yale to determine the amount of food necessary to sustain the human frame in good health. Professor Russell H. Chittenden, the director of the school, who conducted the experiments, read the paper. He said that three classes of men were experimented on—namely, several professors of the school, some students, and a squad of United States soldiers. There was a gradual reduction of meat and other proteid foods with little if any increase in starch and other foods in nearly all the tests. No fixed regimen was required in any case, the endeavour being to satisfy the appetite of each subject. At the end of the experiments, which lasted six months, the whole body of men who had been the subjects were in the best of health. Their weight in some cases was almost exactly the same as when the experiments were begun and in some slightly lower. The daily consumption of food was found at the close of the experiments to have been much less than the recognised standard and from a third to half as much as the average man eats.

Bellevue Hospital, New York City.

The inadequacy of the accommodation at Bellevue Hospital has been a subject of complaint for a considerable time and affairs have recently reached a climax. Owing to the inclement weather which has been experienced in New York city for the past few months the hospital has been greatly overcrowded, the consequence being that the work of the medical staff has become very heavy. At the present time three and sometimes four or five physicians are compelled to sleep in one room. As to the patients, according to Mr. Mabon, superintendent of the hospital, not only is every cot occupied but a large number of the inmates must sleep on mattresses placed on the floor. It is gratifying, therefore, that the plans for the new Bellevue Hospital to cover three city blocks are now on exhibition. The sum of $702,000 (£140,400) has been asked for from the New York City Board of Estimate for the first pavilion, and no considerable delay in proceeding with the work is expected.

The Discovery of Anæsthesia by Ether.

Mrs. Elizabeth Morton, the widow of Mr. W. T. G. Morton of Boston, Massachusetts, the American to whom is attributed the discovery of anæsthesia by ether, died on April 21st from pneumonia at the Hotel Martha, Washington. Mrs. Morton, whose maiden name was Whitman, was born in 1826 in Farmington, Connecticut, and was married to Mr. Morton in 1844. Soon after marriage her husband began that series of experiments which ended in the famous public demonstration that by the inhalation of ether vapour surgical operations could be rendered painless. It is a sad illustration of the proverbial ingratitude of republics that the American Government never admitted that Mrs. Morton had any claim on it, although the reports of six Congressional committees during her husband's lifetime had recommended that an appropriation of several hundred thousand dollars

should be made in recognition of the value of ether anæsthesia during the Civil War.

The United States Commission to the Isthmus of Panama.

The United States Commission to the Isthmus of Panama was accompanied by Dr. Gorgas and Dr. Le Garde of the army, Dr. Ross of the navy, and Captain Gillette of the United States Engineer Corps, who are now engaged in making investigations of the various hospitals heretofore established by the French company and in looking into the general sanitary regulations which will be necessary. Mr. Parsons, one of the commissioners, who has recently returned to the United States, while acknowledging that the present death-rate on the isthmus is high, has expressed confidence that with a supply of good water furnished both to Colon and Panama and with a complete system of sewers, supported by proper sanitary regulations vigorously enforced, both of these cities can be made healthful places of residence.

April 30th.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Plague.

A CASE of bubonic plague of a mild character has occurred in Sydney. It appears that the patient, a boy, had been employed at a produce store where rats had been dying in numbers and he had to remove their bodies. As rats on the premises were found to be plague-infected the mode of infection in this case seems clear. When cases of plague were found some time ago in Queensland the New South Wales authorities prohibited grain and fodder from Queensland from entering New South Wales. The Queensland Government protested that such prohibition was a violation of the regulations of the Venice Convention and an unfriendly act. Now that plague exists in New South Wales Queensland has retaliated by prohibiting produce from New South Wales. A fatal case of plague has occurred at Cairns, Queensland, in an aboriginal woman.

The Declining Birth-rate.

The Government statistician of Victoria, Mr. W. McLean, read a paper on the Declining Birth-rate in Australia at the last meeting of the Medical Society of Victoria. He stated that after a careful investigation he was unable to agree with Mr. Coghlan, the New South Wales statistician, that there was only one explanation of the decline—viz., the application of artificial checks to conception. Mr. McLean maintained that the decline was due mainly to natural causes. First of all he observed that the ordinary birth-rate per 1000 of the total population was untrustworthy in young communities. In the earlier years the population, owing to immigration, consisted mainly of men and women at the reproductive period of life. As time goes on the proportion of such to the actual population must diminish and with it the birth-rate. A more correct rate is the ratio of legitimate births to married women under 45 years of age. But even the correct rate, as estimated by Mr. McLean, showed a decline. One of the causes assigned by Mr. McLean is the cessation of immigration, the immigrants being specially selected and of a type likely to be prolific. The next cause, in Mr. McLean's opinion, is a low and declining infantile mortality. He quoted a number of figures from different countries showing *primâ-facie* evidence of the intimate connexion existing between the two events (birth-rate and infant mortality). This association, he said, cannot be regarded as fortuitous and the death of an infant under one year does not present any obstacle to conception of another child but nurture of the child does. It was then shown that in Victoria there had been a decline in infantile mortality and also in New South Wales. The infant mortality was also relatively low compared with some European states. In this connexion Mr. McLean takes exception to a statement made in this column in THE LANCET of Jan. 16th last, p. 200: "Not only is there a declining birth-rate but also an excessive infantile mortality in New South Wales." This assertion was made with reference to a recommendation of the health officer of Sydney for the purpose of trying to diminish "the excessive infantile mortality" in that city. The relative infantile mortality may be comparatively low and yet, because far from the lowest possible in a young country with relatively small population and a healthy climate, actually excessive. The Royal Commission on the birth-rate also inquired into the infantile mortality. It reports as follows:—

> The mean infantile mortality (i.e., the number of deaths of infants under one year of age in every 1000 children born) for a period of ten years, 1892 to 1901, in the Australian States and New Zealand, is as follows:—New South Wales, 110·6; Victoria, 109·0; South Australia, 106·0; Queensland, 103·2; West Australia, 146·1; Tasmania, 95·3; New Zealand, 81·4. The figures representing infantile mortality in New South Wales for each year, from 1864 to 1902, show that for the period of 29 years since 1874 the rate has been a fairly level one; for the ten years prior to 1874 the mean rate was somewhat lower; and in the 40 years reviewed the infantile mortality has not increased. Infantile mortality in Sydney compares favourably with that in other large cities. The study we have made of the causes underlying infantile mortality has satisfied us that it is far higher than it would be if all were done that could be done and might reasonably be expected to be done to protect the new-born from the many risks to life to which their helplessness exposes them.

Mr. McLean also took exception to the following statement by Mr. P. E. Muskett in his work, "The Feeding and Management of Australian Infants in Health and Disease": "It is now nearly 14 years ago since I first called attention to the appalling infantile mortality obtaining in the different Australian States." Mr. McLean maintains that the Australian mortality is not appalling when compared with that of European States, Sweden and Norway excepted. He gives the rate for Great Britain as 15 and for Australia as 11 per 100 births. Saxony, the highest, is 28. In discussing the paper Dr. Barrett considered that to account for a low birth-rate as a consequence of a low death-rate was an inversion of cause and effect. With fewer children increased care was taken of those that were born. In Australia the death-rate had not dropped in proportion to the birth-rate.

Sale of Poisons and Patent Medicines.

Incidentally the Birth-rate Commission inquired into the sale of certain drugs and patent medicines and obtained a report from the Government analyst on 22 much advertised nostrums, nearly all of which were found to be dangerous to life unless used under proper advice. Careful consideration of the whole of the evidence regarding the Poisons Act leads the Commission to make the following recommendations:—

> 1. That the Act be amended so as to apply to the sale distribution, gift, or disposal of poisons and also of drugs reported to be abortifacient. 2. That the Act be amended so as to prohibit the sale of patent medicines, proprietary medicines, and secret remedies, whether they contain poisons or not, and of photographic materials which contain poison, if accurate formulæ of such articles be not printed or written plainly on the bottle, case, box, or wrapper immediately containing them, together with the name of the vendor.

The Balmain Hospital and its Honorary Medical Staff.

As stated last month, the board of the Balmain Hospital appointed as paid medical officer Dr. P. J. Kelly who had been ostracised by the New South Wales branch of the British Medical Association for accepting the position of medical officer to the Balmain United Friendly Societies' Dispensary. The honorary medical staff warned the hospital board that if Dr. Kelly was appointed the honorary staff would not work with him. At the meeting of the board on March 21st the staff announced that its members had decided to give a fortnight's notice of their intention to resign unless Dr. Kelly withdrew. At the board's meeting on March 27th the staff wrote tendering their resignations but stating that they would continue to act until arrangements could be made to relieve them. The resignations were accepted and applications were invited for the positions. The board placed on record its appreciation of the services rendered to the hospital by the late members of the honorary staff.

Women's Hospital, Sydney.

The report presented at the eighth annual meeting of the supporters of the Women's Hospital, Sydney, stated that at the last annual meeting it had been decided that the institution should amalgamate with the Benevolent Society of New South Wales upon a scheme which was recommended by the directors. Steps were taken in this direction and for a period of over three months the Women's Hospital was under the administration of the Benevolent Society. After the experience then gained it was found that the basis of agreement had evidently not been clearly understood by the authorities of the Benevolent Society and it was agreed that the Women's Hospital should withdraw from the amalgamation at the stage it had then reached. One of the advantages looked for in the proposed amalgamation had been the securing of an up-to-date hospital building. Failing the completion of those arrangements the matter had been seriously considered by the directors and they were determined to make special efforts during the coming year

to obtain funds from the public to purchase a suitable building. During the year 438 patients were treated by the indoor department, 412 were discharged, one died, and 25 remained in the hospital. There had been 272 births (143 males and 129 females). No less than 1692 patients had been treated by the outdoor department and there were 431 births. The average cost per bed was £51 16s. With reference to this hospital Dr. A. W. Munro, in an address to the Obstetric Nurses' Association, said that by the practice of the hospital the total mortality of childbirth in the State had been reduced by half. He also showed how in the ten years of the history of the institution just completed the scourge of puerperal fever—which had been the dread of obstetric practice in the past—had not caused a sing'e death, which fact was mainly satisfactory when it was learned that 3891 cases were attended by officials of the institution in the ten years under review. In order that the practice of midwifery might attain its proper level he advocated the raising of the educational and social status of those who engaged in the art of obstetrics.

April 5th.

Obituary.

RICHARD SISLEY, M.D., M.R.C.P. LOND.,

LATE MEDICAL REGISTRAR, CURATOR OF THE MUSEUM, AND PATHOLOGIST TO ST. GEORGE'S HOSPITAL.

WE regret to announce the death at Florence of Dr. Richard Sisley, which occurred on Saturday last, May 7th.

Dr. Sisley was but little known in the medical profession, where he never took the position to which he had a right by his learning, originality, and industry—qualities of his which our connexion with him, as a member of our staff, enabled us to appreciate thoroughly. He was born at Godalming on August 4th, 1856. He came of an old Huguenot stock, his ancestors settling in Sussex and later in Surrey, after the Revocation of the Edict of Nantes, and following the occupation of millers. His mother was a Miss Webber, of Morchard Bishop, Devon. He was educated at Reading School and St. George's Hospital and as a student his individualities made him a marked man, for in methods of working, choice of recreation, and even in clothes he was a law to himself. And to such a height did his hatred of anything like conventionalism rise that he could not bring himself to pretend docility, however perfunctory, where his feelings were those of resistance—he justified in fact his Huguenot origin. Consequently he found it impossible to conform to the curriculum provided for him by his medical school, certain lecturers being so antipathetic to him that he was driven to obtain instruction in their subjects at other hospitals. Having duly become qualified he served his turn as house physician at St. George's Hospital, which office at that time, being necessarily preluded by the offices of assistant medical registrar and house physician to out-patients, implied a two years' residential appointment. As a resident he was quickly found by the hospital authorities to be an able man and a vigorous thinker, while his displayed prejudices and antipathies passed unnoticed because in the main they were so just and generous. Having taken the M.B. Lond. with honours in botany, chemistry, obstetrics, and medicine he went to Vienna and worked hard at practical pathology. On his return to England he was elected pathologist and curator of the museum at St. George's Hospital and later medical registrar. As medical registrar it was his business to examine and to make notes upon every case admitted to the medical wards and Sisley toiled enthusiastically in the splendid clinical field now at his disposal. In this appointment he will be remembered by several generations of students at St. George's Hospital because of his unvarying kindness to them as a coach. Sisley's generosity in respect of those who needed instruction, and especially of those to whom the fees of the usual coach were prohibitive, was literally unbounded. If a man showed a desire to learn, if he was "hard up," and if he was not a swaggering man or an untruthful man, Sisley would coach him gratuitously in the wards, the deadhouse, and at his private rooms until he could not help passing his examinations. In fact, all through his too short life, where he gave his service either as a duty to his views of generosity or out of affection to a friend, he gave it fully and without stint.

At the end of his term as medical registrar it was expected confidently by all his friends that Sisley, who had now taken his M.D. at London University and had also graduated in State Medicine, would be elected upon the staff of the hospital but the hospital authorities thought otherwise. They saw Sisley's difficult side as a colleague, they knew him as a man of firm opinions and uncompromising views, but they did not apparently see in him a strong and loyal man who would have worked ably and hard for the school, the charity, and his profession. He was twice passed over and having been made to feel that further candidature was useless he retired from the contest and to a great extent from the practice of his profession. At the same time his interests in medicine, and especially epidemiology, impelled him to continue at medical work, and in 1891 he produced an able and highly interesting monograph on the Influenza Epidemic of 1889–1890, clearly proving the contagious nature of the disease at a time when the theory of miasmatic origin was still generally received. Dr. H. Franklin Parsons's official report on the same epidemic, which was published almost simultaneously, went over much identical ground, and from the day of the issue of these two independent treatises the method of spread of influenza has never been in doubt. In 1892 he made an investigation into the epidemic of cholera then prevalent in Russia, which appeared partly in our columns and partly in those of *Public Health*, and upon his return he planned a riding tour through England with the idea of making discursive remarks upon the rural sanitary conditions of the country. The scheme came to nothing, partly because Sisley saw almost at once that the labour of such a survey, however superficial would be too much for one man, and partly because the archæology, customs, and folklore of the counties through which he first rode—Norfolk and Suffolk—appealed to him so vividly that his interests became diverted. From this time forth for the rest of his life, although until 1900 he always kept a *pied à terre* in London, he lived largely in the country, and wherever he lived his mental energy and curiosity impelled him to acquire first-hand knowledge. At Godalming he had a beautiful house and here he embarked largely but without profit upon market gardening; at Southwold he kept a boat and took a practical interest in fishing and was a Past Master of the Martyn Lodge of Freemasons, No. 1983, which meets at that town; and latterly, when he resided on the coast of North Devon, he started to breed Exmoor ponies.

Some eight years ago he began to write occasionally for THE LANCET, his articles being always marked by originality of phrase and love of accuracy. His quaint erudition, shown in his practical knowledge of fishing, of gardening, of forms of agriculture, of many local sanitary or insanitary customs, of cooking, of many departments of art, of ecclesiastical music and church ritual, made him able to review with justice books dealing with other than medical issues, and as a reviewer he was distinctly kind, having no finicking over-appreciation of a writer's style but an unerring eye for the value of his matter and for the care with which he had striven to remove sources of mistake. In 1897 he performed a great journalistic feat for us by making an exhaustive survey of the premises, stations, filters, and distributing methods of the water companies of London. That the purchase of the undertakings of the various metropolitan water companies by Government, by a Water Board, or by the London County Council (as sanitary authority over a great part of the district supplied) would form part of the approaching political programme we had felt assured, and we found in Dr. Sisley, who had studied the question historically and politically, an ideal writer, anxious to clear up as far as possible all the public doubts as to the position of these splendid monopolies. Day after day he visited the various stations of the companies whose officials extended to him every facility for inspecting and reporting upon their work. The articles ran serially in our columns for over a year, they bristled with figures, and were fully illustrated with maps and plans drawn under Sisley's directions; but despite the technical and occasionally contentious nature of much of the information, and despite the many critical eyes that must have watched them for errors either of statement or deduction, for practical purposes his words passed unchallenged. A Royal Commission and a Court of Arbitration have gone with care over the same ground since and have confirmed the scrupulous accuracy of his statements. The articles, with slight alterations, were published later by the Scientific Press in a book which constitutes a small but significant memorial of Sisley's determination, powers of observation, and passion for being exactly right.

Although the end of his life came abruptly his health, which in spite of his big frame and strenuous ways of living had never been good, had begun to fail for the last five years. While pathologist at St. George's Hospital a severe attack of diphtheria, contracted in the post-mortem room, was followed by paralysis and signs of cardiac failure. This was nearly 20 years ago and during most of the intervening period he seemed sound and vigorous and not indeed, to be damaged permanently. But his habits of life and multifarious interests and pursuits induced in him great physical strain that was frequently followed by collapse, breathlessness, a little tendency to anæmia, and occasional attacks of bronchitis. This should have warned him to be more sedentary, but his recovery always seemed complete and it was always followed by further long sailing expeditions in an open boat, long drives across the countryside in a dogcart, or long tramps over the Surrey hills or the Suffolk flats, and in each case his expeditions were taken regardless of temperature or weather. Some five years ago he could not disguise from himself that he was neither so robust as he had been nor so quick to recover from his periods of asthenia, and having no very close ties in London or in any part of the country he decided to try residence on the coast of North Devon, possibly being attracted to the neighbourhood by his late mother's connexion with it. At first the change did him good, if only because he made Devonshire his home and obtained the rest that he had never had when his time was divided between a Surrey house, a Suffolk cottage, and London chambers. But unfortunately in January of last year he contracted typhoid fever. Somewhat to the surprise of his medical attendants he pulled through a long and severe attack, in which on several occasions extreme prostration seemed to forbid hope. Then after a slow convalescence he seemed to have made a good recovery. A relapse, however, occurred in Florence last week in exceptionally pathetic circumstances. He was on his wedding journey, having married in April last, when an attack of hæmatemesis led to the end.

Sisley, as has been said, was not at all well known in the medical profession. He concealed his great kindness of heart by his sarcastic manner, he made little use of his erudition save anonymously in our columns or among his intimate friends in conversation at the Savile Club, he never spoke at learned societies, and he wrote no purely medical papers save the monograph on influenza to which we have referred. But those who did know him know that it was an unfortunate chapter of accidents which deterred him from securing the position in his profession which his originality of conception and sincerity of design must have won for him. And they will also feel that they have lost in him a remarkably loyal friend. He was a man of very few intimacies, but to be his friend was absolutely to command him, his time, his house, his purse, and his best thoughts. His young widow may feel assured that she has the deepest sympathy of all her husband's friends in her tragic loss.

GEORGE RICHARD SAUNDERS, M.B., B.C. CANTAB., L.R.C.P. LOND., M.R.C.S. ENG.

WE regret to announce the death on Feb. 25th of Dr. G. R. Saunders of Wanganui, New Zealand, at the comparatively early age of 50 years. Dr. Saunders was the eldest son of Deputy Inspector-General George Saunders, M.D., C.B., and was born at Buttevant, co. Cork, on July 25th, 1853. He was educated privately and subsequently went up to Caius College, Cambridge, in 1871. At about this time, we believe, he also entered his name as a medical student at St. Bartholomew's Hospital, London, mainly, if tradition can be relied upon (and we fancy the story is true), with the view of being able to compete in one of the sprint races in the inter-hospital sports on behalf of that hospital which by his aid is said to have won the odd event and thereby the Shield that year. During this period he probably devoted himself more to the athletic and social sides of university life than to hard reading and some time later he went out to New Zealand where he was for a while engaged in teaching and other scholastic work; he held the appointment of head-master of the Wanganui Collegiate School for some years and this school owes much of its present success to his efforts. While in New Zealand he met the lady who became his wife and his very happy marriage, together with the earnest wish of his friends at home, seems to have impressed him with the necessity of returning to England and completing his medical education. This, much to his credit, he successfully accomplished. Going back to St. Bartholomew's Hospital and passing his time between there and Cambridge he worked hard and in 1883 took his B.A. degree and subsequently in 1889 the M.B. and B.C. degrees of that university. In 1890 he also became L.R.C.P. Lond. and M.R.C.S. Eng. Having completed his medical education he returned to New Zealand and settled down in Wanganui where he became a well-known practitioner. He was on the staff of the Wanganui Hospital for some years and was consulting surgeon to that institution at the time of his death. He published a useful little work on infant feeding and children's diseases and was regarded in New Zealand as an authority in this particular branch of his work. In 1901 he had the honour of being chosen president of the New Zealand branch of the British Medical Association and he delivered an excellent opening address which was published at length in our columns on Jan. 11th, 1902, p. 69. Although many (alas, perhaps the majority) of those whom he delighted to call his friends at Cambridge have passed away there are still Cambridge men of the early "seventies" and many old St. Bartholomew's men who will feel a sense of deep personal loss when they hear of the death of George Saunders. He was eminently a good and sincere friend and his cheery, hearty, breezy manner endeared him to those who knew him well. An old friend and fellow student describes him as one of the most generous and open-handed of "pals" and recalls many instances both of his kindness and of his keen sense of humour. During his last illness, which was of a very painful nature, those about him spoke of his gentleness, his patience, and his fear of giving trouble. All these qualities were eminently characteristic of the man. Shortly after his return to New Zealand in 1890 he had the misfortune to meet with a very serious accident by being thrown from his horse and this necessitated his return to England for a period of some nine months.

He was devoted to all manly sports and took the keenest interest in athletics, nothing delighting him more than a sporting match with himself as one of the principals. One of the happiest days of his life witnessed his elder son's success (when a boy of six) in an open handicap sprint race at the old Lillie Bridge grounds.

Dr. Saunders had done welcome service for THE LANCET, having for a good many years occupied the position of our special correspondent in New Zealand. To the widow and two sons who are left to lament the loss of one of the very best of husbands and fathers we tender our sincere sympathy.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Tommasoli, professor of dermatology in Palermo.—Dr. A. B. Arnold, formerly professor of neurology in the Baltimore College of Physicians and Surgeons.—Dr. Bruchon, professor of anatomy in Besançon.—Dr. F. Holcombe, formerly professor of ophthalmology in New York University Medical College.—Dr. Ch. Rouget, formerly professor of physiology in Montpellier.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At the third examination for medical and surgical degrees, Easter term, the following candidates were successful:—

Part II., Surgery, Midwifery, and Medicine.—A. E. Barclay, M.A., Christ's; H. J. D. Birkett, B.A., Trinity; E. M. Brown, B.A., and S. Child, B.A., Pembroke; R. A. Clapham, B.A., Emmanuel; G. H. Colt, B.A., Sidney Sussex; A. W. D. Coventon, B.A., W. L. Cripps, B.A., H. M. Davies, B.A., and R. G. Elwell, B.A., Trinity; H. Falk, B.A., King's; G. R. Fortner, B.A., Pembroke; D. H. Fraser, B.A., Caius; J. Goss, B.A., Jesus; C. F. Hadfield, M.A., and Everard Harrison, B.A., Trinity; W. Hastings, B.A., Christ's; T. G. M. Hine, M.A., and H. F. Horne, B.A., King's; W. R. Hume, B.A., Pembroke; K. H. A. Kellie, B.A., Caius; J. Lambert, B.A., Downing; R. O. Lee, B.A., Emmanuel; T. C. Lucas, B.A., Clare; S. M. Mackenzie, B.A., Trinity; C. W. P. Moffatt, B.A., Clare; W. M. Mollison, B.A., King's; A. R. Moore, B.A., Caius; R. F. Moore, B.A., Christ's; W. V. Naish, M.A., Emmanuel; R. G. Nothwanger, M.A., and C. T. MacL. Plowright, B.A., St. John's; C. A. W. Pope, B.A., H. Rischbeith, M.A., and R. H. Robbins, B.A., Trinity; B. H. Stewart, B.A., Jesus; C. Stiebel, Trinity Hall; G. A. Ticehurst, B.A., St. John's; R. B. Whittig, B.A., King's; and R. A. Worthington, B.A., Clare.

UNIVERSITY OF OXFORD.—In a Congregation held on April 28th the following degrees were conferred:—

Doctor of Medicine.—Thomas Edwyn Cecil Cole, Christ Church.
Bachelor of Medicine and Surgery.—William Edward Blackall, Non-Collegiate.

TRINITY COLLEGE, DUBLIN.—At the previous medical examination the following passed in the subjects indicated:

Anatomy and Institutes of Medicine.—Wilfred L. Hogan, John Du P. Langrishe, William J. Thompson, and Joseph C. Ridgway.
Physics and Chemistry.—James M. Harold.
Botany and Zoology.—James D. K. Roche, George N. Morphy, David J. Millar, and George Meldon.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin*: Dr. Hugo Liepmann, *privat-docent* of Neurology and Psychiatry, has been granted the title of Professor.—*Buenos Ayres*: Dr. Diogenes Decond and Dr. Juan B. Justo have been appointed Professors of Clinical Surgery.—*Constantinople*: Dr. Rieder is retiring from the Directorship of the Medical School at Gülhane on account of the failure of his health. His assistant, Dr. Deycke, has been appointed to succeed him.—*Erlangen*: Dr. F. Jamin has been recognised as *privat-docent* of Internal Medicine.—*Florence*: Dr. Teodoro Stori has been recognised as *privat docent* of Operative Medicine.—*Gratz*: Dr. Oskar Zoth of Innsbruck has been appointed Professor of Physiology.—Dr. Friedrich Pregl has been appointed Extraordinary Professor of Physiological Chemistry.—*Greifswald*: Dr. Sötbeer of Heidelberg has been recognised as *privat-docent* of Internal Medicine.—*Kieff*: Dr. Ianichevski has been recognised as *privat-docent* of Neurology.—*Naples*: Dr. Guglielmo Mondio has been recognised as *privat-docent* of Psychiatry and Neurology and Dr Raffaele Albenzio as *privat-docent* of Midwifery and Gynæcology.—*Odessa*: Dr. A. Fawicki of St. Petersburg has been appointed to the chair of Clinical Therapeutics.—*Pavia*: Dr. Pier Francesco Arullani has been recognised as *privat-docent* of Neurology.—*Stockholm*: Dr. Henry Isaac Marcus has been recognised as *privat docent* of Psychiatry.—*Strasburg*: Dr. Asch has been recognised as *privat-docent* of Urinary Diseases and Dr. E. Schlesinger as *privat-docent* of Children's Diseases.

ROYAL COLLEGE OF SURGEONS IN IRELAND: GENERAL MEETING AND ELECTION OF OFFICERS.—A meeting of the Fellows will be held on Saturday, June 4th, at 1 o'clock, to receive the annual report of the Council. A meeting will also be held on Monday, June 6th, at 1 o'clock, pursuant to the provisions of the Charters, to elect a president, vice-president, council, and secretary of the College for the ensuing year. Fellows who may desire to have their names printed on the list of candidates for office should signify their wish by letter to the registrar, at the College, on or before Tuesday, May 24th, as it is necessary to include the names in the voting papers which are forwarded to the Fellows, and no candidate is eligible unless his application is received within the date specified.

MANCHESTER SOUTHERN HOSPITAL.—The report of the committee of the Manchester Southern Hospital tells of important work done on insufficient means. The number of patients treated during the year was 5805 and at the Maternity Hospital 1820 cases were attended to. The expenditure was £4311 and the income £2962, leaving a deficit of £1349. It may be remembered that it was intended to remove the hospital to Stanley Grove and that a site which had been acquired there was wanted for the new Royal Infirmary. An amicable arrangement was made, the infirmary giving about £15,000 to the Southern Hospital which has a site in close proximity to that which was given up. It is expected that possession of the new site will be obtained during the summer. It is intended to begin the erection of the first portion of a new hospital for about 60 beds on a portion of the site, and when possession of the remainder is acquired rooms for 40 additional beds and the administration block, &c., will be built. The Lord Mayor, in moving the adoption of the report, said that the hospital conferred benefits over a very large area in South Lancashire, and that it ought to be supported more generously. Dr. A. Hopkinson spoke of the advantages of the cooperation between the Royal Infirmary, the Southern Hospital and the Owens College, and anticipated for the hospital a future of great service not only in relieving pain and distress, but in affording means of training candidates for the medical profession. Mr. W. Cobbett, chairman of the infirmary board, pointed with satisfaction to the fact that the negotiations between the hospital and the infirmary had been conducted without the slightest difficulty.

MEDICAL GOLF TOURNAMENT.—We are asked to remind our readers that the seventh annual medical golf tournament will be held on Thursday, June 9th, on the course of the Northwood Golf Club. The events comprise 18 holes match play *v.* Bogey and a foursome sweepstake competition *v.* Bogey. Particulars may be obtained from Mr. Rolf Creasy, Windlesham, Surrey.

PRESENTATION TO A MEDICAL PRACTITIONER.—At the presentation of certificates and medallions to the successful candidates of the St. Austell (Cornwall) branch of the St. John Ambulance Association, on May 3rd, Mr. Archibald Shaw, M.D., C.M. Glasg., was presented with an oak stationery cabinet as a mark of appreciation for his services as honorary instructor.

ROYAL WATERLOO HOSPITAL FOR CHILDREN AND WOMEN.—His Grace the Duke of Argyll, P.C., K.T., G.C.M.G., G.C.V.O., &c., will preside at the festival dinner of this hospital to be held on Monday, June 20th next, at 8 P.M. (Monday after Ascot), in the new rooms at the Savoy Hotel. It is hoped that any ladies or gentlemen willing to attend the dinner as stewards or to act as hosts and hostesses, bringing their own parties, will kindly send in their names as early as possible. There will be no payment for dinner tickets and separate tables to accommodate any number of friends (from two to 50) can now be reserved without charge. The ladies' committee, over which H.R.H. the Duchess of Albany presides, is giving its cooperation and support. The details are in the hands of the Social Bureau, 30, New Bond-street, but information can be obtained from the ladies' committee, the managing director of the Savoy Hotel, or at the hospital.

WHITSUNTIDE ON THE CONTINENT.—Cheap tickets available for eight days will be issued by the Great Eastern Railway Company to Brussels, May 18th to 21st inclusive and May 23rd, *viâ* Harwich and Antwerp. Passengers leaving London in the evening reach Brussels next morning after passing the night on board the steamer. For visiting the Hague, Amsterdam, Utrecht, and other parts of Holland, the Rhine, North and South Germany, and Bâle for Switzerland special facilities are offered *viâ* the Great Eastern Railway Company's Royal British Mail Harwich-Hook of Holland route; through carriages and restaurant cars run in the North and South German express trains to Cologne, Bâle, and Berlin, reaching Cologne at noon and Bâle and Berlin in the evening. The General Steam Navigation Company's fast passenger steamers will leave Harwich on May 18th and 21st for Hamburg, returning on May 22nd and May 25th. The United Steamship Company of Copenhagen Royal Mail steamers will leave Harwich for Esbjerg, on the west coast of Denmark, on Thursday, May 19th, and Saturday, May 21st, returning on Tuesday, May 24th, and Wednesday, May 25th.

ROYAL INSTITUTION.—A general monthly meeting of the members of the Royal Institution was held on May 9th, the Duke of Northumberland, K.G., the President, being in the chair. The President announced that he had nominated the following vice-presidents for the ensuing year: Sir William Abney, K.C.B., Mr. Shelford Bidwell, Right Hon. Lord Kelvin, Dr. Ludwig Mond, Sir Thomas H. Sanderson, G.C.B., Sir Felix Semon, Sir James Crichton-Browne (treasurer), and Sir William Crookes (honorary secretary). The following were elected honorary members: Professor E. H. Amagat, Professor L. P. Cailletet, Professor J. N. Craft, Professor H. A. Lorentz, Professor E. W. Morley, Professor E. C. Pickering, Professor and Madame Curie, Professor H. L. Le Chatelier, Professor G. Lippmann, Professor J. W. Brühl, Professor G. H. Quincke, Professor E. Fischer, Professor F. W. G. Kohlrausch, Professor H. Landolt, Professor L. Boltzmann, Dr. H. Kamerlingh Onnes, Dr. G. Lunge, Professor P. T. Cleve, and Professor P. Zeemann. The special thanks of the members were returned to Mrs. Frank Lawson and to Sir Thomas Sanderson for their donations to the Fund for the Promotion of Experimental Research at Low Temperatures. The following were elected members: Mr. P. M. Brophy, Mr. W. J. Canter, Mr. Eyre Crowe, Mr. H. T. Ellis, Miss E. Morgan, Mr. Berkeley Portman, and Mr. Burnett Tabrum, J.P.

MEDICAL MEN AND FREEMASONRY.—At the recent Grand Festival the following members of the medical profession had the honour of being appointed Grand Officers by the M. W. Grand Master, the Duke of Connaught and Strathearn: S. H. T. Armitage, M.D., W. M. of the University of Edinburgh Lodge, and J. H. Parker Wilson, F.R.C.S. Edin., Medical Officer to H.M. Prison, Pentonville, W. M. of the Lanesborough (St. George's Hospital) Lodge, were appointed Junior Grand Deacons; Williams Cock, M.R.C.S. Eng., L.R.C.P. Edin., received the rank of Past Junior Grand Deacon, and J. Campbell Maclean, M.B., C.M. Edin., that of Past Assistant Grand Director of Ceremonies.—The University of Durham Lodge, No. 3030, was consecrated at the Criterion Restaurant, Piccadilly, London, W., on Thursday, May 5th, by Sir Edward Letchworth, Grand Secretary, assisted by Lord Barnard, Provincial Grand Master of Durham, and other Grand Officers. The first Worshipful Master of the Lodge is Sir George Hare Philipson, M.D., and amongst the Founders are 22 medical graduates of the University.—It may be interesting to medical Freemasons to state that Mr. R. F. Gould has recently published "A Concise History of Freemasonry" (pp. 448, and six full-page illustrations; published by Gale and Polden, Limited, London, 1903, price 10*s.* 6*d.* net). Some of our readers will doubtless remember that Mr. Gould, who is recognised as one of the best authorities on matters connected with the history of Freemasonry, has always been insistent in pointing out the important part ever played in connexion with Freemasonry by members of the medical profession (vide THE LANCET, Jan. 26th, 1895, p. 246). There can be no doubt that the comparatively recent accession of medical and hospital lodges, as well as the increase in the number of university lodges, will serve to perpetuate and to strengthen this connexion.

SOCIETY OF PUBLIC ANALYSTS.—The twenty-ninth anniversary dinner of this society took place on May 3rd at the Trocadéro Restaurant. Mr. Thomas Fairley, the President, occupied the chair. Among the guests were representatives of the Board of Agriculture, the Local Government Board, the Royal Agricultural Society of England, the Government Laboratory, the Chemical Society, the Institute of Chemistry, the Institute of Brewing, and the Society of Medical Officers of Health. Mr. W. W. Fisher, after proposing the toast of "The Government Departments," said that the relations between analysts and the Government departments were very friendly. The analysts came into close touch with the Board of Agriculture, particularly concerning butter and margarine and fertilisers and foodstuffs. Public analysts examined during the year over 70,000 samples of food and drugs, of which about eleven-twelfths were satisfactory. The samples were unsatisfactory or adulterated in about 6000 cases and of these in 19 cases out of 20 the Government officials confirmed the opinions of the analysts. Sir Thomas Elliott (secretary of the Board of Agriculture) said that a department could do its work well by being constantly associated with gentlemen outside like the Society of Analysts. The President, in responding to the toast of "The Society of Public Analysts," stated that the society was founded 30 years ago. It had welcomed every active worker and had many times supplied the Government with important information concerning the purity of foodstuffs and many of its suggestions had been adopted. The society was not a qualifying body but worked in harmony with the Institute of Chemistry which was a qualifying body. 90 per cent of the analysts holding official appointments in the United Kingdom were Fellows of the Institute.

MEDICO-LEGAL SOCIETY.—A meeting of this society was held on April 19th, Sir W. J. Collins, the President, being in the chair. The discussion upon Dr. S. B. Atkinson's paper on Live Birth in Theory and Practice was resumed and Mr. J. Troutbeck dealt with cases of the stillborn in coroners' courts. Dr. F. J. Smith preferred the legal recognitions rather than the medical definitions. Dr. Littlejohn discussed the full expansion of the lungs as proof enough of live birth and said that he had seen cases in which premature children had cried and breathed, yet at the post-mortem examination there was no floating of the lungs. Dr. L. Freyberger and Dr. J. Maughan also spoke on the subject. Mr. J. W. Orr of the Middle Temple then read a lucid paper entitled "A Plea for Cremation," dealing with the medico-legal aspect. This, among others, will shortly appear in the Transactions of the society. Mr. Troutbeck in the discussion which followed maintained that cremation did not add in any way to the risks of obliterating evidence of crime. Mr. W. Schröder and Dr. J. G. Garson spoke on the subject, whilst Mr. G. Pernet preferred superficial earth burial as being more in accordance with nature's laws. The President hoped for better death certification of some kind. Dr. Littlejohn and Dr. F. J. Wethered showed specimens of Foreign Bodies in the Walls of the Heart, Dr. Wethered's case being one where the patient was in hospital for phlebitis with mitral regurgitation, when after six weeks in hospital she suddenly became breathless and died. At the necropsy a hatpin was found completely transfixing the aorta and left auricle. Six new members were elected.

LITERARY INTELLIGENCE.—Mr. J. Lionel Tayler, whose speculations are based not only upon theory but upon medical practice both in the West and East Ends of London, is publishing with Messrs. Smith, Elder, and Co. on May 16th a work entitled "Some Aspects of Social Evolution." In this he proceeds from a general review of heredity as the basis of physical evolution to the differentiation of special types corresponding to certain classes of the social organism. Accepting the principle of individual variation with unmodifiable structure, he rejects that of progress by use-inheritance, but finds in natural selection, which constantly accelerates the development of a given variation, a sufficient cause to produce new types of humanity. In this volume he further discusses the question of typical temperaments, their physical basis and probable influence on the future of society.

Parliamentary Intelligence.

HOUSE OF COMMONS.

WEDNESDAY, MAY 4TH.

An Irish Nurse's Salary.

MR. REDDY asked the Chief Secretary to the Lord Lieutenant of Ireland whether he had received a resolution from the Tuam board of guardians protesting against the refusal of the Local Government Board to agree to an increase of £10 a year in the salary of Nurse O'Connor; whether he was aware that Mrs. O'Connor's district comprised 34,528 acres with a sparse population, which rendered the attendance at cases all the more difficult; and whether, seeing that a similar increase was sanctioned for a lady with 12,000 less acres to cover than Mrs. O'Connor, he would advise the Local Government Board to grant this increase.—MR. WYNDHAM replied: The honourable and gallant Member for North Galway had directed my attention to this case and I am making some inquiries on the subject which are not yet completed. I will communicate the result to the honourable Member in due course.

The Plague in the Transvaal.

MR. MACNEILL asked the Secretary of State for the Colonies what provisions, if any, had been made to secure the postponement of the immigration of Chinese labour into the Transvaal till the plague now raging in that country had been stamped out; whether the Chinese labourers, to whom inducements were offered to emigrate to the Transvaal, had been informed of the ravages of the plague in that country; and whether the agents of Lord Milner employed in holding out to Chinese labourers the advantages of residence in the Transvaal had been instructed not to withhold information from them with reference to the plague; when was the Colonial Office informed of the plague in the Transvaal and after what interval from the receipt of such information was the existence of the plague communicated to the Government.—MR. LYTTELTON said: I do not admit that plague is now raging in the Transvaal and I am informed by Lord Milner that the medical authorities on the spot there are of opinion that plague will very soon die out, though vigilance will in no case be relaxed. Lord Milner points out that 50 deaths occurred on the first outbreak of plague in the Indian location and that the whole population were then moved to a new site where only one death occurred during the first period of incubation and none since. I am not aware whether any special instructions have been issued and I do not think it really necessary to do so as the Government would in any case have to satisfy itself that there was no undue risk in allowing immigration to take place. The telegram from Lord Milner announcing the outbreak of plague was dated March 20th, the day after the nature of the disease was ascertained. This telegram was communicated to the House of Commons on March 23rd.

Returns of Vivisection.

DR. J. G. SHIPMAN asked the Home Secretary whether he could state when the returns of experiments on living animals in 1903 would be published and what was the number of dogs vivisected in 1903 in University College, London.—MR. AKERS-DOUGLAS replied: The return in question is now in course of being printed and will be published as soon as possible. It will contain the usual full particulars but I have no material from which I can answer the second paragraph of the question.

THURSDAY, MAY 5TH.

Metropolitan Asylums Board and Vivisection.

DR. SHIPMAN asked the Home Secretary whether his attention had been drawn to recent proceedings of the Metropolitan Asylums Board; and whether he had yet received an application from the

Board to register a place for the performance of experiments on living animals under the Cruelty to Animals Act, 1876; and, if so, whether he would give the House an opportunity of discussing the question before public money was diverted to such a purpose.—Mr. AKERS-DOUGLAS said: I have been furnished with a report of the recent proceedings of the Metropolitan Asylums Board in the matter referred to but I have received no application for registration or for a licence under the Cruelty to Animals Act in connexion therewith. If I receive any such application it will be my duty to consider and to deal with it in accordance with the ordinary practice in such matters. The registration of premises at a small-pox hospital for the investigation of small-pox by means of experiment would not be an unprecedented step and I am not aware that honourable Members would need any exceptional facilities for criticising this particular item of my administration.

Foreign Spirit as Irish Whisky.

Sir THOMAS ESMONDE asked the Chief Secretary to the Lord Lieutenant of Ireland whether he had received any communication from the County Wexford United Agricultural Society with reference to the sale of foreign spirit as Irish whisky; and whether the Government proposed to take any steps in the matter.—Mr. WYNDHAM said: I have received a communication of the nature referred to. The matter is engaging the attention of the Department of Agriculture, which will take such action as may appear to be required in order to protect, so far as possible, the interests of Irish growers of cereals used in the production of genuine Irish whisky.

Appointment of Medical Superintendent Questioned.

Mr. ROCHE asked the Chief Secretary to the Lord Lieutenant of Ireland whether the election of Dr. J. St. L. Kirwan to the position of resident medical superintendent of the Ballinasloe Lunatic Asylum had yet been sanctioned; and, if not, what was the reason of the delay.—Mr. WYNDHAM replied: The appointment has not yet been sanctioned. The Lord Lieutenant is in correspondence on the subject with the committee of management of the asylum.

FRIDAY, MAY 6TH.

Medical Staff of Meath Hospital.

Mr. CLANCY asked the Chief Secretary to the Lord Lieutenant of Ireland whether, in view of the fact that the medical staff of the Meath Hospital (County Dublin Infirmary) claimed the right to elect to vacancies in their own body, and that this right was claimed by the members of the staff elected since the passing of the Local Government Act, 1898, as well as by those in office before that date he could state if it had been actually exercised on any occasion since 1898 by members of the staff elected since that date; and whether any representations had been received in reference to this matter from the infirmary committee.—Mr. WYNDHAM replied: Two gentlemen were elected to the medical staff of this hospital since the passing of the Act of 1898 by the medical board under the 55 Geo. III. The answer to the last query is in the negative.

MONDAY, MAY 9TH.

The Ballinasloe Asylum Case.

Mr. SLOAN asked the Chief Secretary to the Lord Lieutenant of Ireland, whether the appointment of Dr. J. St. L. Kirwin to be medical superintendent of the Ballinasloe Asylum, over the head of Dr. J. Mills who was acting superintendent, had been sanctioned; and, if so, on what grounds.—Mr. WYNDHAM replied: The appointment has not yet been confirmed by the Lord Lieutenant who is in correspondence with the committee of management of the asylum on the subject.

Royal Army Medical College.

Dr. R. FARQUHARSON asked the Secretary of State for War what progress was being made in the building of the Royal Army Medical College and when the temporary arrangements for the instruction of lieutenants on probation and captains were to come to an end by their being transferred to the new college.—Mr. ARNOLD-FORSTER replied: The building of the Army Medical College has not yet commenced but the plans have been prepared and the contract documents are being drawn up. In these circumstances I am unable at present to reply to the latter part of the honourable Member's question.

Natal Volunteer Ambulance Corps.

S MANCHERJEE BHOWNAGREE asked the Secretary of State for War whether he had received the report or information called for by his predecessor regarding the services rendered during the war in South Africa by the Natal Volunteer Ambulance Corps which was formed from the local British Indians residing in Natal and whether any action had been taken in regard to the grant of Queen's medals to the members of the corps.—Mr. ARNOLD-FORSTER replied: Yes, sir; the information concerning the services of this corps has been received and the leaders of the corps, 32 in number, inclusive of Dean Booth, who acted also as medical officer, have been granted Queen's medals. The further question of the grant of medals to the sirdars and bearers of the corps has been referred to the general officer commanding for report.

Another Plague Question.

Sir WALTER FOSTER asked the Secretary of State for the Colonies whether he had received any information respecting the alleged outbreak of plague among the recruited Chinese labourers now collected at Hong-Kong whether he was aware that plague usually began to increase at this period of the year, and whether, in these circumstances, he proposed to take any steps to postpone the introduction of indentured Chinamen into the Transvaal?—Mr. LYTTELTON replied: I received a telegram from the officer administering the Government of Hong-Kong on Saturday stating that one case of bubonic plague has occurred in a lodging-house partly occupied by emigrants (the patient was a rejected emigrant) and that there has been no other case among emigrants up to the present time. I believe this is the case. So long as the medical advisers of the local government do not regard the conditions under which the Chinese labourers are introduced as involving undue risk, and subject to such precautions as they think necessary, I do not, as at present advised propose to interfere. I may add that the length of the voyage from China is largely in excess of the period of incubation of the disease and this very greatly reduces the risk of the introduction of plague.

TUESDAY, MAY 10TH.

Inoculation of Dogs.

Mr. WEIR asked the Secretary of State for the Home Department whether he was aware that it was proposed to inoculate dogs with small-pox virus at the Joyce Green Small-pox Hospital and how many dogs would be inoculated and whether more than one experiment would be carried out on each dog.—Mr. AKERS-DOUGLAS replied: No application has yet been made to me for permission to make any such experiments as are indicated in the question and I have nothing to add to the answer on the same subject given recently.

Coastguard Dwellings and Public Health.

Mr. CLAUDE HAY asked the Secretary to the Admiralty whether the dwellings occupied by the coastguard had been examined with a view of ascertaining whether these dwellings were in conformity with the Health Acts; if so, when such examination was made; and whether, in the event of no such specific inquiry having been made within the last three years, he would cause full inquiry to be instituted and present the result in detail to the House.—Mr. PRETYMAN replied: No such specific examination has been made nor is such an inquiry considered necessary. All coastguard buildings are in charge of Admiralty works officers. They are periodically examined and any defects brought to light are attended to.

BOOKS, ETC., RECEIVED.

ASH AND CO., LIMITED, 42, Southwark-street, London, S.E.

A Handbook of Sanitary Law for the Use of Candidates for Public Health Qualifications. By B. Burnett Ham, D.P.H. Camb., M.D., M.R.C.S., L.R.C.P., Commissioner of Public Health for Queensland. Third edition. 1903. Price 2s. 6d. net.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent-garden, W.C.

Organic Nervous Diseases. By M. Allen Starr, M.D., Ph.D., LL.D., Professor of Diseases of the Mind and Nervous System, College of Physicians and Surgeons, the Medical Department of Columbia University in the City of New York. Price 25s. net.

Lectures on Clinical Psychiatry. By Dr. Emil Kraepelin, Professor of Psychiatry in the University of Munich. Authorised translation from the German. Revised and edited by Thomas Johnstone, M.D. Edin., M.R.C.P. Lond., Member of the Medico-Psychological Association of Great Britain and Ireland. Price 10s. 6d. net.

CHURCHILL, J. AND A., 7, Great Marlborough-street, W.

The Elements of Chemistry. By M. M. Pattison Muir, M.A., Fellow and Praelector in Chemistry of Gonville and Caius College, Cambridge. Price 10s. 6d. net.

F. A. DAVIS COMPANY, Philadelphia, U.S.A.

A Text-book of Physiology. By Isaac Ott, A.M., M.D., Professor of Physiology in the Medico-Chirurgical College of Philadelphia. Price $3.00 net.

DOWSETT, C. F., Winklebury, Basingstoke, Hampshire.

Buy English Acres. By C. F. Dowsett (for many years in Lincoln's Inn Fields, London), Fellow of the Surveyors' Institution, Member of the Royal Agricultural Society, Member of the Society of Authors (1890). Price 3s. 6d. post free.

HEDDERWICK, JAMES, AND SONS, *Citizen* Office, St. Vincent-place, Glasgow.

The Knights Hospitallers in Scotland and their Priory at Torphichen. By George Thomas Beatson, M.D., C.B., Chairman of the Council of the St. Andrew's Ambulance Association and Member of the British Central Red Cross Committee. Price 2s. 6d. net.

JOHN BALE, SONS, AND DANIELSSON, Limited, 83-91, Great Titchfield-street, W.

Orthmann's Handbook of Gynæcological Pathology. For Practitioners and Students. Translated by C. Hubert Roberts, M.D. Lond., F.R.C.S. Eng., M.R.C.P., Physician to the Samaritan Hospital, London. Assisted by Max. L. Trechmann, F.R.C.S. Eng., M.B., C.M. Edin. Price 5s. net.

LIBRAIRE MALOINE, 23-25, Rue de l'Ecole-de-Médecine, Paris; BUREAUX DE LA "GAZETTE DES EAUX," 60, Rue Mazarine, Paris.

Annuaire des Eaux Minérales, Stations Climatiques et Sanatoriums de la France et de l'Etranger. Par le Docteur G. Morice, Rédacteur-en-Chef de la "Gazette des Eaux." 1904. 46e Année. Price 1 fr. 50.

MACMILLAN AND CO., Limited, London.

Archives of the Middlesex Hospital. Vol. II. Second Report from the Cancer Research Laboratories. Edited for the Cancer Investigation Committee by Alexander G. R. Foulerton, F.R.C.S., Director of the Bacteriological and Clinical Laboratories, the Middlesex Hospital. Price not stated.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. A Preliminary Report on a Parasite found in Persons suffering from Enlargement of the Spleen in India. By Lieutenant S. R. Christophers, M.B., I.M.S. (on special duty). New Series. No. 8. Issued under the authority of the Government of India by the Sanitary Commissioner with the Government of India, Simla. Price one rupee and eight annas.

SHERRATT AND HUGHES, 65, Long Acre, W.C.

Life of Joseph Jordan, Surgeon, and an Account of the Rise and Progress of Medical Schools in Manchester. With some Particulars of the Life of Dr. Edward Stephens. By F. W. Jordan, M.D. Price 5s. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

BAIN, J. GORDON, M.B., C.M. Glasg., has been re-appointed a Member of the Medical Staff of the Wellington and District Cottage Hospital.

BARCLAY, WILLIAM JOHN, M.D., F.R.C.S. Edin., has been appointed Port Health Officer for the Port of Oamaru, New Zealand.

BEVAN, ARTHUR, M.D. Lond., M.R.C.S. Eng., L.R.C.P. Lond., has been appointed Anæsthetist to St. Thomas's Hospital.

BROWN, A. T. V., M.B. Durh., has been appointed Certifying Surgeon under the Factory Act for the Chatham District of the County of Kent.

DINGLE, C. V., M.D. Durh., has been appointed Medical Officer to the Tees Port Sanitary Authority.

FLETCHER, H. MORLEY, M.D., F.R.C.P. Lond., has been appointed Assistant Physician to St. Bartholomew's Hospital.

HILLYAR, C. B., L.R.C.P., L.R.C.S. Edin., has been re-appointed a Member of the Medical Staff of the Wellington and District Cottage Hospital.

HORNER, W. E. L., M.D., B.S. Lond., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer of Health to the United Urban District of Wolstanton, Stoke-on-Trent.

KENNEDY, A. J., L.S.A., has been appointed Certifying Surgeon under the Factory Act for the Shepley District of the County of York.

LEE, W. H., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer to the new Isolation Hospital at Morton, Yorkshire.

MACDERMOTT, D. A., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory Act for the Denby Dale District of the County of York.

MARTIN, JOHN MIDDLETON, M.B., B.Ch., D.P.H. Cantab., has been re-appointed Medical Officer of Health for the Stroud (Gloucestershire) Urban District.

MEREDITH, JOHN, M.D., L.R.C.S. Edin., has been re-appointed a Member of the Medical Staff of the Wellington and District Cottage Hospital.

MEREDITH, R. W. H., L.R.C.P. Lond., M.R.C.S., has been re-appointed a Member of the Medical Staff of the Wellington and District Cottage Hospital.

PHILIPSON, SIR GEORGE HARE, M.D. Cantab., M.D. Durh., D.C.L., LL.D., has been elected President of the Newcastle Royal Infirmary.

REID, J., M.B., M.S. Aberd., has been appointed Certifying Surgeon under the Factory Act for the Portsoy District of the County of Banff.

ROBERTSHAW, W. M., M.B., M.S. Edin., has been appointed Certifying Surgeon under the Factory Act for the Stocksbridge District of the County of York.

SHAW, W. F., M.B., Ch.B. Vict., has been appointed Resident Medical Officer to St. Mary's Hospital for Women and Children, Manchester.

SMITH, ENID MARIAN, M.B., B.S. Lond., has been appointed Senior House Surgeon at the Victoria Hospital, Hull.

TIVY, CECIL B. F., M.B., B.Ch., B.A.O. R.U.I., has been appointed Assistant House Surgeon to the Staffordshire General Infirmary, Stafford.

WILSON, R. APPLETON, M.D., C.M. Edin., has been re-appointed a Member of the Medical Staff of the Wellington and District Cottage Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ARMY MEDICAL SERVICE, War Office.—Examination for not less than 30 Commissions in the Royal Army Medical Corps.

BOURNEMOUTH, ROYAL VICTORIA HOSPITAL.—Honorary Medical Officer for Electrical Department.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BURY ST. EDMUNDS, WEST SUFFOLK GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board and lodging.

DUBLIN, RICHMOND DISTRICT ASYLUM.—Clinical Assistant for six months. Salary at rate of £60 per annum, with apartments and rations.

DUMFRIES AND GALLOWAY ROYAL INFIRMARY.—House Surgeon. Salary £50 per annum, with board and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician for six months. Honorarium of £25, with board, residence, &c.

EBBW VALE WORKMEN'S MEDICAL FUND.—Assistant Medical Officer at Beaufort and Assistant Medical Officer at Victoria. Salary in each case £200 per annum.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark.—House Surgeon. Salary £80, with board, residence, and washing. Also Surgeon to Out-patients.

FINCHLEY URBAN DISTRICT.—Medical Officer of Health. Salary £200 per annum and fees.

GLASGOW PARISH COUNCIL BARNHILL POORHOUSE, Springburn.—Resident Medical Officer. Salary £250 per annum, rising to £350, with board and lodging.

HASTINGS, ST. LEONARDS, AND EAST SUSSEX HOSPITAL, Hastings.—Physician.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £20, washing allowance £2 12s., with board and residence.

INDIAN MEDICAL SERVICE, India Office.—13 Commissions in Indian Medical Service.

LANARK COUNTY COUNCIL.—Assistant Medical Officer of Health. Salary £140 per annum, with travelling expenses.

LEEDS, GENERAL INFIRMARY.—House Physician. Board, lodging, and washing provided.

LEEDS PUBLIC DISPENSARY.—Junior Resident Medical Officer. Salary £100, with board and lodgings.

LONDON HOSPITAL, Whitechapel, E.—Surgical Registrar.

LONDON LOCK HOSPITAL, 91, Dean-street, W.—Surgeon to Out-patients.

LONDON (ROYAL FREE HOSPITAL) SCHOOL OF MEDICINE FOR WOMEN, 8, Hunter-street, Brunswick-square, W.C.—Lecturer on Anatomy.

LONDON THROAT HOSPITAL, 204, Great Portland-street, W.—Third Honorary Anæsthetist.

MANITOBA, UNIVERSITY OF.—New Professorships in Botany (including Geology), Physics (including Mineralogy and Crystallography), Chemistry, Mathematics, Physiology (including Zoology). Salary $2500.

MILLER HOSPITAL AND ROYAL KENT DISPENSARY, Greenwich-road, S.E.—Junior Resident Medical Officer for six months. Salary £80 per annum, with board, attendance, and washing.

NEW HOSPITAL FOR WOMEN, Euston-road, N.W.—House Physician, House Surgeon, and Resident Medical Officer (all females).

NORFOLK AND NORWICH HOSPITAL.—Electro-Therapeutist.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Resident Medical Officer and Assistant Resident Medical Officer, each for six months. Salaries at rate of £50 per annum, with board, residence, and washing. Also Second Honorary Anæsthetist.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon. Salary £100, with board, residence, and washing.

REETH UNION, North Yorks.—Medical Officer of Health and District Medical Officer. Salary £95 per annum and fees.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—Hunterian Professors, the Erasmus Wilson Lecturer, and the Arris and Gale Lecturer.

ROYAL LONDON OPHTHALMIC HOSPITAL, City road, E.C.—Third House Surgeon. Salary £50, with board and residence.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL, King William-street, West Strand, W.C.—Clinical Assistants for six months.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, 49, Leicester-square, W.C.—Honorary Assistant Anæsthetist. Also Honorary Dentist.

ST. PETER'S HOSPITAL FOR STONE, ETC., Henrietta-street, Covent Garden, W.C.—Junior House Surgeon for six months. Salary at rate of £50 a year, with board, lodging, and washing. Also six Clinical Assistants for six months.

SCARBORO' HOSPITAL AND DISPENSARY.—Junior House Surgeon for six months. Salary £50, with board and residence.

SHEFFIELD CHILDREN'S HOSPITAL.—Lady House Surgeon. Salary £80 per annum, with board, lodging, and washing.

SHEFFIELD ROYAL INFIRMARY.—Junior Assistant House Surgeon. Salary £70 per annum, with board, lodging, and washing.

SUSSEX COUNTY HOSPITAL.—Second House Surgeon, unmarried. Salary £60 per annum, with board, residence, and washing.

VALKENBERG ASYLUM, near Cape Town.—Assistant Medical Officer, unmarried. Salary £250 per annum, rising to £300, with board, lodging, and washing.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Surgeon for six months. Honorarium of £25, with board and lodging.

WALLASEY DISPENSARY AND VICTORIA CENTRAL HOSPITAL, Liscard.—House Surgeon, unmarried. Salary £100, with apartments, board, and service.

WEST LONDON HOSPITAL, Hammersmith-road, W.—House Physician for six months. Board, lodging, and laundry provided.

WESTERN GENERAL DISPENSARY, Marylebone-road.—Second House Surgeon, unmarried. Salary £80 per annum, with board, residence, and laundry.

WESTMINSTER GENERAL DISPENSARY.—Resident Medical Officer. Salary at rate of £120 per annum, with rooms, gas, coal, and attendance.

YORK COUNTY HOSPITAL.—House Physician. Salary £100 per annum, with board, residence, and washing.

YORK DISPENSARY.—Resident Medical Officer, unmarried. Salary £120 a year, with board, lodging, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

STIFF.—On May 10th, at Bury St. Edmunds, the wife of Harold Stiff, M.B. Cantab., of a daughter.

UNITT.—On May 4th, at Quorn, Leicestershire, the wife of James Arthur Unitt, L.R.C.P., M.R.C.S., of a son.

WHITE.—On April 18th, at Vanbrugh-park, Blackheath, S.E., the wife of Finch White, M.R.C.S., L.R.C.P., of a daughter.

MARRIAGE.

SMITH—ROSS.—On April 18th, at Harlech Villa, Duncon, by the Rev. R. S. Macmorran, M.A., and the Rev. J. W. Girvan, William Smith, M.B. Lond., of Brabourne, Kent, to Mary Tulloch, youngest daughter of B. C. Ross, Esq., of 4, Ardgowan-square, Greenock.

DEATHS.

HORDEN.—On May 5th, at Brixton-hill, S.W., suddenly, Herbert Henry Horden, M.D. Lond., M.R.C.S., L.R.C.P.

SISLEY.—On May 7th, at Florence, Richard Sisley, M.D., of Saunton, Braunton, N. Devon, aged 47.

***N.B.*—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.**

Notes, Short Comments, and Answers to Correspondents.

AN INTERESTING POINT IN A GENERAL PRACTITIONER'S ACCOUNT.

A CASE of some interest came before his honour Judge Stonor and a jury on May 4th at Brompton. The plaintiff was a medical man practising in Chelsea and he sought to recover £23 from a retired army officer. The claim was in respect of professional attendance upon various members of the defendant's family, but principally upon a son, about eight years of age. The account originally amounted to a little over £50; cheques had, however, been paid from time to time. It was thought at first that the little lad suffered from stone in the bladder but an operation revealed the presence of a piece of wood in that organ. A communication was discovered from the bowel into the bladder. The wood had the resemblance of an apple stalk and it appeared to have ulcerated the bowel and then to have worked into the bladder. A first operation was performed by the present plaintiff, but a subsequent one was carried out by another surgeon, and an important point in dispute was whether the plaintiff was entitled to charge for assisting at this operation. The defendant said that he did not engage the plaintiff to assist. The plaintiff, on the other hand, said that it would have been a most exceptional procedure had he, as the boy's regular medical attendant, not been present at the operation. The other surgeon charging an inclusive fee of 50 guineas did not preclude the plaintiff from also charging for his services. The plaintiff was asked to produce his books, when the defendant's counsel discovered that 12 guineas had first been put down in the ledger for an operation, and 15 guineas afterwards substituted. Counsel argued that "first impressions" were generally correct but the plaintiff said that in fairness to himself he was obliged to make the alteration. Ultimately the jury found in favour of the plaintiff for the full amount claimed and his honour gave judgment accordingly.

In our opinion no other decision was possible.

THE QUESTION OF ADMISSION TO HOSPITALS.

To the Editors of THE LANCET.

SIRS,—I should be glad if you could let me have some idea of the procedure to be followed to obtain the admission of a patient into one of the London general hospitals.

To day I was called to a patient who had broken her patella. I improvised a back splint, bandaged, and sent her to the hospital. Her relatives have just returned to me and state that after a long delay (during which they received no attention) she was refused admission and sent to the infirmary. As I sent her in hoping that she would have been operated on I am naturally surprised at the action of the authorities of the hospital. If there is any book, pamphlet, &c., which gives any information as to routine to be observed I should be glad to know.

I am, Sirs, yours faithfully,

May 10th, 1904. W. A. T.

*** The decision as to whether a patient should or should not be admitted to a hospital rests with the officer of the hospital in charge of the admission room. Some hospitals require letters and some do not. We can hardly imagine that if the case mentioned had been one for operation—i.e., if the surgeons considered operation necessary and the patient had consented—admission would have been refused if there was a bed available.—ED. L.

PRECAUTION AGAINST BUGS.

A CORRESPONDENT writes to ask us if we can inform him of some method of protection against the attacks of bugs. If the bugs simply live in the walls of the room the simplest plan is to move the bedstead away from the wall and to place its feet in tins of water or oil. If, however, the bugs inhabit the bedstead, and we gather from our correspondent's letter that this is probably the case, the only certain method of preventing their attacks is the use of the following apparatus, called, from its inventor, the "Levinge." The "Levinge" consists of an _|-shaped sack, one arm of which is made of calico or fine linen and the other arm of muslin. In the linen (horizontal) part the sleeper lies, the end where the feet come being closed. The end of the muslin (vertical) part is open with a tape run round the opening, and about a foot or 18 inches from the opening is a hoop. The sleeper gets into the sack through the opening, tightens up the said opening and fastens it firmly by means of the tape running in the hem and suspends the tapes to a hoop or to a nail driven into the wall. It will thus be seen that he is inclosed in a chamber which is quite impermeable to a bug. The hoop serves to keep open the portion of the "Levinge" which covers his face. The only objection to this apparatus is that in very hot weather it is apt to be somewhat oppressive but such a complication is not likely to arise at the place to which our correspondent says that he is going. In our experience no so-called insect powders are of the slightest use against bugs.

A COMPLICATED LIABILITY.

A KINGSWOOD woman fractured her thigh recently, a medical man was sent for, and he advised her removal to the Bristol Royal Infirmary and as the patient was destitute communicated with the relieving officer. The woman was taken to the infirmary and the person who provided the cab sent a bill for 6*s.* to the relieving officer. This was brought before the Warmley guardians and there was an animated discussion at several meetings as to who was liable to pay. At first the guardians endeavoured to make the husband pay but he refused as he was living apart from her and said she was a member of the club of the medical man who was sent for to attend her. The guardians then applied to the medical man for the money. He replied that he did not order the cab; it was ordered by the relieving officer. Eventually the guardians sued the woman herself in the Bristol county court for the 6*s.* Her defence was that she never ordered the cab and it was against her wish that she was taken to the infirmary. She further stated that she did not remain in the institution and paid 5*s.* for a cab to take her home, which she thought ought to be refunded to her. His honour Judge Austin decided that the woman was not liable and gave judgment to that effect with costs. It remains to be seen what action, if any, the Warmley guardians will now take in the little comedy.

THE CRUELTY OF FRIENDS.

THE paragraph which follows appeared in the *Midland Counties Tribune* of April 29th:—

> Mr. and Mrs. L——, ——, desire to thank many friends for kind inquiries, and to say that their son has successfully undergone the operation for appendicitis. Their sincere thanks are also tendered to Dr. J——, the operator, and Dr. P—— who administered the anæsthetic.

We have received a letter with regard to it from a medical practitioner who signs himself "Disgusted." We agree that the publicity is most unfortunate and that Mr. and Mrs. L. could hardly have done persons to whom they are grateful a worse service than advertising them in this manner. At the same time our correspondent will understand that no blame can attach to the medical men as they cannot be suspected of complicity.

MINOR SURGERY IN CLUB PRACTICE.

To the Editors of THE LANCET.

SIRS,—The question has been raised by a member of a club as to whether minor surgery is included in the fee for medical attendance. On taking the club no special agreement was made and I assumed that only purely medical attendance was to be given for the fee of 1*s.* per quarter. Is the committee right in contending that this is for minor surgery also? I should be obliged for advice, and desire to be guided by the usual custom in the matter.—I am, Sirs, yours faithfully,

C. E. S.

*** Some of our readers may help "C. E. S." by telling him the procedure in their own experience. There is no general rule but if minor surgery (as seems to us likely) has been performed by our correspondent's predecessors in the appointment, we think that he will be well advised to follow suit.—ED. L.

EYESTRAIN AND HEADACHE.

A CORRESPONDENT sends us the following joke from last week's number of our contemporary *Tit-Bits* which he thinks has a direct bearing on the topical question of eyestrain and headache:—

> PATIENT: "I'm troubled with headaches in the morning. It may be on account of my eyes; perhaps I need stronger glasses."
>
> MEDICAL MAN: "No; I think you merely need weaker glasses—and fewer—at night."

GOATS AND RATS.

Dr. George H. R. Dabbs in a letter to the *Westminster Gazette* of May 10th, referring to some recent remarks of Sir James Crichton-Browne on the goat as a milk source for the children of the poor, asks whether there is any truth in the prevalent idea in the Basque country that where goats are the rat is not. "Over and over again the Basque farmer has told me," he says, "that the rat will never come where the smell of the goat is. It is the only virtue, æsthetic or other, which I have ever known attributed to the rat, but if there is an antagonism of environment in the two animals Sir J. Crichton-Browne's recommendation may have an even wider value than he anticipates."

THE CHEMISTS' EXHIBITION.

AN exhibition full of interest to the drug and allied trades was opened at the National Skating Palace, Argyll-street, W., on May 9th. The occasion marked the tenth exhibition of the kind which has been held since the scheme was set on foot by the proprietors of the *British and Colonial Druggist*. The space in the skating palace was completely occupied with exhibits and the whole presented quite a picturesque effect. Most of the leading druggists were represented and the exhibits included pharmaceutical preparations, hygienic and sanitary products, photographic requisites, dietetic specialities, and a thousand and one other articles which are now recognised as inseparable from the pharmacist's business. A feature of the exhibition was an admirable series

of photographs and a collection of photographic apparatus. Demonstrations were also given of the properties of radium, helium, krypton, and argon. At one stall was exhibited a splendid collection of crystals of chloride of gold which was stated to be worth close upon £2000. There was a very satisfactory attendance of members of the trade from all parts of the world and there were many members of the medical profession present who took an evident interest in the exhibits. The organisers may be congratutated on the continued success of this interesting annual event.

LONDON POST-GRADUATE ASSOCIATION.

THE scheme for providing clinical instruction for qualified medical men on a co-operative basis in the metropolitan hospitals continues to do good work. It is satisfactory to learn that a number of the ticket-holders renew their tickets after trying the scheme for a period of three months, thus showing their satisfaction with the plan. The scheme is already so well known that it is not necessary to recapitulate the advantages provided by a single ticket which secures admission to the 16 different hospitals forming the association for the very moderate fee of seven guineas for three months or ten guineas for six months. For those who desire to see as many cases as possible in a short period a wealth of material is thus made available and practitioners who desire to keep up to date in their clinical work will find here the most ample opportunities for doing so. Particulars may be obtained by writing to the Secretary, London Post-Graduate Association, Examination Hall, Victoria Embankment, London, W.C., or by interview between the hours of 11.30 and 1 or of 2 and 3, except on Saturday.

HOLMAN TESTIMONIAL FUND.

THE following further list of contributions has been forwarded to us by the honorary treasurer of this fund, Dr. John H. Galton, Chunam, Sylvan-road, Norwood, S.E., by whom or by the secretary, Mr. W. A Berridge, Oakfield, Redhill, Surrey, subscriptions will be received:—

	£	s.	d.		£	s.	d.
Dr. G. B. Ferguson ...	1	1	0	Dr. R. Saundby	1	1	0
Rev. W. A. Thomas ...	1	1	0	Brigade-Surgeon John Wales, A.M.D. (retired)	1	1	0
Mr. J. A. Newsom ...	1	1	0				
Mr. E. N. Gardiner ...	1	1	0	Surgeon C. B. Fairbank, R.N. (O.E.)	1	1	0
Mr. T. Neale	1	1	0				
Mr. J. W. Wilson... ...	1	1	0	Mr. A. C. C. Parkinson (O.E.)	0	10	6
Mr. H. V. Plum	1	1	0				
Mr. H. E. Gardiner ...	1	1	0	Mr. Bilton Pollard	5	5	0
Rev. A. C. Knight ...	1	1	0	Dr. H. Hetley	2	2	0
Dr. H. F. Lee	1	1	0	Dr. J. Percy A. Gabb ...	2	2	0
Miss Jones Parry... ...	1	1	0	Mr. A. Hope Walker ...	0	10	6

AN UNSUSPECTED SOURCE OF AN OBJECTIONABLE PARASITE.

IN reference to a paragraph under the heading of "Clean Heads" in the letter from our Manchester correspondent (vide THE LANCET, May 7th, p. 1311) we have received an interesting communication which suggests an unsuspected way in which pediculi may be conveyed to the human body. A child living in a suburb of London occasionally had her head washed in rain water obtained from the rain-water pipe which ran down the side of the house. This water was heated, though perhaps not to the boiling point, and then cooled with cold water from the tap. From time to time pediculi were found on the head of the child and as she did not often meet other children and the children she did meet were above suspicion the source of the objectionable parasite remained a profound mystery until it was noticed that the appearance of the pediculi synchronised with the washing of the child's head in rain water. On discontinuing the use of rain water the trouble ceased. Subsequently lice were found in water obtained from the rain-water pipe and our correspondent suggests that they must have been washed from the nests of sparrows which were known to be in the gutter supplying the pipe. This seems to be the only feasible explanation of a curious occurrence.

WATER SUPPLY.

To the Editors of THE LANCET.

SIRS,—A gravel pit is being opened about three-quarters of a mile from the village in which I live. The output is to be about 800 to 1000 tons of gravel a day for three years. The village lies between the pit and the river. The district is very flat and only about 40 feet above sea level. The water level is about seven feet from the surface. The bed of gravel is some 11 feet 6 inches deep and is to be worked out. At about ten feet deep constant pumping is required. The general character of the soil is sandy gravel. The water-supply of the village is entirely from wells. What is likely to be the effect on the water-supply (if any), and can any steps be taken in the matter?

I am, Sirs, yours faithfully,

May 10th, 1904. CIGARETTE.

AN ABNORMAL CLINICAL THERMOMETER.

WILL a correspondent who sent to us recently a clinical thermometer incorrectly graduated kindly supply us with his name and address?

Schoolmaster.—We do not think that there could be any objection to the sick rooms of a school house being in connexion with the main body of the building by means of a covered way, seeing that the sick rooms have a separate entrance. We do not gather from our correspondent's letter whether the buildings are in process of erection or are already built, but supposing that it is decided to make the sick room building entirely separate from the other there is no danger or difficulty in moving a patient, even though the weather be bad, provided that he be well wrapped up. The risk of infection lies not so much in aerial conveyance from one building to the other as in the chances of infection being conveyed by attendants or by the common use of spoons, forks, crockery, and the like, by the patient and the other boys without thorough cleansing and disinfection of the same.

M.D. Lond.—Among the latest books dealing with hypnotism is "Hypnotism: its History, Practice, and Theory," by J. Milne Bramwell, M.B., C.M. Edin. Price 12s. net. Published by Grant Richards, 48, Leicester-square, W.C. The following books by Dr. Alfred T. Schofield and published by Messrs. J. and A. Churchill, 7, Great Marlborough-street, W., also contain references to the subject: "The Force of Mind; or, the Mental Factor in Medicine." Price 5s. net. "The Unconscious Mind." Price 7s. 6d. "Unconscious Therapeutics; or, the Personality of the Physician." Price 5s. net.

Strathcona.—There is nothing illegal in having the notices printed but we do not quite understand to whom they are to be sent. If they are to be distributed broadcast to the public—i.e., to the patients of other medical men—the procedure will be quite wrong. There is no difference between such a method of establishing a *clientèle* and canvassing or open advertisement.

R.—(1) Our correspondent must supply us with a copy of the rules and regulations of the society in question before we can answer his question. (2) *No.*

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (16th).—London (2 P.M.), St. Bartholomew's (1.30 P.M., St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (17th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (3 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.).

WEDNESDAY (18th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

THURSDAY (19th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

FRIDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.).

SATURDAY (21st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (16th).—MEDICAL SOCIETY OF LONDON (11, Chandos-street, Cavendish-square, W.).—8.30 P.M. Annual Conversazione. Reception by the President. 8.45 P.M. Oration:—Sir Isambard Owen: The Future of Medical Education in London.

THE SOCIOLOGICAL SOCIETY (School of Economics and Political Science (University of London), Clare Market, W.C.).—5 P.M. Paper:—Mr. F. Galton: Eugenics, its Definition, Scope, and Aims.

TUESDAY (17th).—PATHOLOGICAL SOCIETY OF LONDON (20, Hanover-square, W.).—8.30 P.M. Card Specimens will be shown by Dr. J. Fawcett and Dr. E. P. Baumann. Dr. W. P. Herringham and Dr. J. H. Thurfield: The Glomerular Lesions of Diffuse (Parenchymatous) Nephritis.—Prof. Farmer, Mr. Moore, and Mr. C. E. Walker: Malignant Growths.—Mr. E. M. Corner: Sarcoma of the Alimentary Canal. Dr. R. N. Salaman: Sarcoma of the Stomach.—Dr. E. P. Baumann and Dr. J. G. Forbes: Primary Sarcoma of the Lung in an Infant.—Dr. P. Weber: Leukanæmia.—Dr. C. B. Blackburn: Cystic Disease of Liver and Kidney.

WEDNESDAY 18th).—BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY (20, Hanover-square, W.).—5 P.M. General Meeting. Election of Officers and Council for the Year commencing October, 1904. 5.30 P.M. Address:—Sir Dyce Duckworth: Some Observations on British Winter Resorts. 7.30 P.M. Annual Dinner at the Criterion Restaurant, Piccadilly. Followed by a Smoking Concert.

ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Exhibition of Flower Seeds under Microscopes:—Mr. C. Beck. Paper:—Mr. E. M. Nelson: Note on Grayson's Rulings.

AMBIDEXTRAL CULTURE SOCIETY (Medical Society's Rooms, 11, Chandos street, Cavendish-square, W.).—5 P.M. Paper:—Dr. J. Shaw: Ambidexterity from the Medical Point of View.

SATURDAY (21st).—OTOLOGICAL SOCIETY OF THE UNITED KINGDOM (Glasgow University).—10.30 A.M. Meeting.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (16th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies street, W.C.).—4 P.M. Dr. A. Whitfield: Clinique. (Skin.) 5.15 P.M. Mr. W. G. Spencer: Diseases of the Lymphatic System.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Davis: Affections of the Lung Substance and its Treatment.

TUESDAY (17th). MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. C. T. Williams: Clinique. (Medical.) 5.15 P.M. Dr. T. C. Fox: Seborrhœa Oleosa, its Consequences and Complications.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. S. Taylor: Hæmoptysis and its Treatment.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Mr. Ballance: Cerebral Abscess.

ASSOCIATION OF ASYLUM WORKERS (Medical Society's House, 11, Chandos-street, Cavendish-square, W.).—4 P.M. Annual Meeting.

WEDNESDAY 18th. MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. A. H. Tubby: Clinique. (Surgical.) 5.15 P.M. Mr. W. Stuart-Low: Aural Sepsis, its Pathology and Treatment.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road W.).—5 P.M. Dr. Robinson: Disorders of Menstruation.

UNIVERSITY COLLEGE (University of London) (Physiological Theatre).—5 P.M. Dr. W. P. May: Advanced Lectures on the Tracts of the Brain—Lecture III.: Topography of the Brain Stem.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND (Langham Hotel).—4 P.M. Quarterly Meeting.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Dr. J. Mitchell Bruce: The Action of Digitalis in Cardiac Failure.

THURSDAY 19th. MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Mr. H. L. Barnard: The Principles of Abdominal Diagnosis

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Edwards: Prostatic Obstruction.

CHARING CROSS HOSPITAL.—4 P.M. Dr. Bosanquet: Demonstration of Medical Cases. (Post-Graduate Course.)

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Dr. J. E. Squire: Differential Diagnosis of Pulmonary Lesions (illustrated by cases). (Post-Graduate Course.)

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital N.).—4.30 P.M. Dr. A. J. Whiting: Sensory Paralysis.

THE HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Dr. Penrose: Demonstration of Selected Cases of Heart Disease.

FRIDAY 20th). MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. P. R. W. de Santi: Clinique. (Ear.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. S. Taylor: Hæmoptysis and its Treatment.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. Ormerod: Myopathy.

EDITORIAL NOTICES.

It is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 12th, 1904.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rain-fall.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 a.m.
May 6	29·68	WNW	0·04	110	60	46	46	49	Cloudy
" 7	29·48	S.W.	0·07	72	51	45	45	49	Cloudy
" 8	29·51	N.E.	0·06	59	47	40	43	44	Overcast
" 9	29·69	W.	0·02	87	55	38	42	45	Cloudy
" 10	29·74	S.E.	0·05	68	52	44	47	48	Raining
" 11	30·14	E.	0·19	69	56	44	45	48	Overcast
" 12	30·14	S.W.	0·03	81	60	48	51	52	Cloudy

During the week marked copies of the following newspapers have been received:—*The News, Liverpool Daily Post, Scotsman, Aberdeen Free Press, Aberdeen Free Press (Weekly), Buxton Advertiser, Boston Independent, Westminster Gazette, Hertfordshire Mercury, Literary Digest (New York), Windsor and Eton Express Standard, Cardiff News, South Wales Daily News, Surrey Advertiser, Coventry Herald, Birmingham Daily Mail, Mining Journal, Local Government Chronicle, Ipswich Times, &c.*

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